

Brown and Caldwell

Remedial Action Work Plan Remedial Work Element I, Soils Chemsol Inc. Superfund Site

September 2001

REMEDIAL ACTION WORK PLAN REMEDIAL WORK ELEMENT (RWE) I, Soils CHEMSOL INC. SUPERFUND SITE PISCATAWAY, NEW JERSEY

Prepared for:

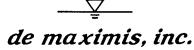
Chemsol Inc. Superfund Site Environmental Remediation Trust

Prepared by:

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September 2001



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September 10, 2001

Mr. Nigel Robinson
United States Environmental Protection Agency
Region II - Emergency & Remedial Response Division
290 Broadway - 19th Floor
New York, NY 10007-1866

VIA FEDERAL EXPRESS

RE:

Chemsol, Inc. Superfund Site Soils Remedial Action Work Plan

Dear Mr. Robinson:

Enclosed please find three (3) copies of the Remedial Action Work Plan (RAWP) for your approval. An additional three (3) copies are also being forwarded directly to TAMS, EPA's oversight contractor. This submittal is intended to be the final submission of the report, and includes the revisions discussed at the August 10, 2001 meeting.

Thank you for your attention to this matter and please contact me at (908) 735-9315 if you have any questions.

Very truly yours,

de maximis, inc.

William J. Lee

cc:

M. Bilimoria, TAMS (3 copies w/ att.)

P. Harvey, NJDEP (w/ att.)

W. Hyatt, Pitney, Hardin, Kipp & Szuch (w/o att.), via U.S. mail

Chemsol Technical Committee (w/ att.), via U.S. mail

3056D/FNL SOILS RAWP (03)/sir

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1.0 INTRODUCTION

This Remedial Action Work Plan (RAWP) has been prepared in accordance with the Consent Decree between the Chemsol Inc. Superfund Site Environmental Remediation Trust (Trust) and the United States Environmental Protection Agency (USEPA) with an effective date of January 26, 2000. The USEPA issued a Record of Decision (ROD) for the Chemsol, Inc. Superfund Site (the Site) in September 1998. The ROD established a remedial action for the Site. The scope and components of the implementation of the remedial action are specified in the Statement of Work (SOW) in the Consent Decree.

The Final RD Report was prepared through a fast-track approach that included the active cooperation of the USEPA and Trust. The solicitation of bids, award of contract, and submittal of this RAWP prior to approval of the Final RD Report is consistent with this fast-track approach. The fast-track approach included interim submittals, expedited review periods, and several meetings in lieu of the preparation of formal comment and response letters. The most recent submittal to the USEPA was a Pre-final RD Report with modifications indicated with redline/strikeout submitted on July 5, 2001.

This RAWP fulfills the requirements of the Consent Decree SOW for a RAWP and will govern the implementation of the remedial action for the Site. The requirements for the RAWP identified in the SOW and the section where each requirement is addressed is presented on Table 1-1.

1.1 SITE DESCRIPTION

The Chemsol Inc. Superfund Site, currently owned by Tang Realty Inc. (TRI), is located at the end of Fleming Street in Piscataway, New Jersey. The site consists of two lots (Lots 1.01 and 1.02, formerly Lots 1-A and 1-B, respectively) which together occupy approximately 40 acres. The majority of the site activities occurred on Lot 1.02 which is open and flat. Lot 1.01, located north and east of Lot 1.02, is primarily wooded. The site was operated during the 1950s and 1960s as a solvent recovery and waste processing facility by a chemical firm known at various times as Chemsol Corporation and Chemsol Inc. and was closed in

Table 1-1 Statement Of Work (SOW) Requirements For RAWP Remedial Action Work Plan, Remedial Work Element I Chemsol Inc. Superfund Site

Statement of Work		RAWP Reference
Citation	Requirement	
IX-B1	Request for modification of approved Final Remedial Design Report	Section 2.0
IX-B2a	Identification of the Remedial Action Project Team	Section 5.1
IX-B2b	Final remedial action schedule	Section 5.3, Appendix A
IX-B2c	Methodology for implementation of CQAPP	Section 5.2
IX-B2d	Procedures and plans for decontamination of equipment	Section 6.1, Appendix G
	and disposal of contaminated materials	
IX-B2e	Methods for satisfying permit requirements	Section 8.0
IX-B2f	Construction operations method including:	Section 3.0, Appendices A,
	Sequence of construction activities	B, C, D, and E
	Site preparation	
	Coordination of activities	
	Site Maintenance	
	Coordination with local authorities for	· · · · · · · · · · · · · · · · · · ·
	contingency planning and potential traffic	
	obstruction	
•	Site entry and access.	
IX-B2g	Construction Quality Control (CQC) including:	Section 4.0
	 Methods for performing QQC inspections 	
	Summary of CQC testing procedures	
	 Managing and scheduling procedures 	· ·
	Reporting procedures	
IX-B3	Health and Safety and Contingency Plans	Section 6.0, Appendices G
		&H
		<u> </u>

1964. The site was re-zoned in 1978, from industrial to residential, and in September of 1983 the site was placed on the Superfund NPL.

1.2 SITE BACKGROUND

Since 1980 and to the present, a number of investigations have been conducted to assess the site geologic and hydrogeologic conditions and determine the extent of soil and groundwater contamination. These investigations have indicated that the soil contamination consists primarily of lead, polychlorinated biphenyls (PCBs) and volatile organics, while the groundwater contamination consists primarily of volatile organic compounds.

In 1990 and 1991, EPA conducted a Focused Feasibility Study (FFS) for bedrock groundwater (Malcolm Pirnie, Inc., 1991). In September of 1991, based on the FFS, the USEPA selected an interim remedy for extraction and treatment of contaminated groundwater within the bedrock. The interim remedy was constructed by the Trust starting in the summer of 1993 and was completed in June 1994. The interim remedy is currently operating.

Additional details related to the site history and previous investigations may be found in the Remedial Investigation Report, CDM Federal Programs Corporation, October 1996 and the Feasibility Study Report, CDM Federal Programs, June 1997.

1.3 REPORT ORGANIZATION

This plan describes the means and methods for performing the Remedial Action for Remedial Work Element (RWE) I and also presents a schedule for completing the remedial activities. The organization of the RAWP is as follows:

 <u>Section 2.0 Design Modifications</u> – provides a description of design modifications identified during the contractor selection process which may represent a variance from the previously submitted Remedial Design Report (Brown and Caldwell, July 2001).

- <u>Section 3.0 Construction Operations</u> provides a discussion of the sequencing of
 the work including site preparation activities, coordination of the various activities
 during construction including excavation, backfill, stream crossings, site
 maintenance during construction, environmental controls, coordination with local
 authorities, and site access control.
- <u>Section 4.0 Construction Quality Control</u> provides a description of the contractor's construction quality control methods including quality control personnel, quality control testing, procedures for management of submittals, and reporting requirements.
- Section 5.0 Site Management Plan provides a description of the project team for
 each aspect of the work (e.g., contractor, project coordination, project quality
 assurance, etc.), a construction schedule, and a discussion of the methods to be
 employed in implementing the Construction Quality Assurance Project Plan
 (CQAPP).
- <u>Section 6.0</u>, <u>Health and Safety Plan</u> provides a description of the Contractor's Health and Safety Plan for the construction activities including decontamination plan for personnel and equipment and a contingency plan.
- Section 7.0, Operation and Maintenance provides a discussion of plans for operation and maintenance of the site.
- <u>Section 8.0</u>, <u>Permits and Approvals</u> describes methods for satisfying permit equivalent requirements.

In addition to the above, seven appendices accompany this RAWP as follows:

- Appendix A Construction Operations Plan provides a description of the contractor's operations plans for the work activities.
- Appendix B Waste Characterization, Transportation, and Disposal Plan describes the contractor's plans for and methods of waste characterization, transportation and disposal.

- Appendix C Waste Handling Plan provides a discussion on the contractor's methods for handling waste.
- Appendix D Environmental Protection Plan provides a description of the contractor's plans for protection of soil and water resources, debris disposal, odor control, noise control, dust control, spill control, and decontamination.
- Appendix E Security Protocol provides a description of the security program to be implemented at the site.
- Appendix F -. Health and Safety Plan provides a description of the health and safety procedures for the construction activities and a decontamination plan for personnel and equipment
- Appendix G Contingency Plan provides a description of the procedures for spill control, air release, fires and explosions, and emergency contact information.
- Appendix H Permits and Approvals provides copies of the permit equivalents and approvals obtained for the remedial action.

2.0 DESIGN MODIFICATIONS

The SOW (Section IX-B1) requires that the RAWP include a "Request for Modification of Approved Final RD Report". Conditional approval of the July 5, 2001 submittal of the Final RD Report by the USEPA was received on August 9, 2001. No substantive modifications to the approved Final RD Report are anticipated.

The conditional approval is contingent upon addressing minor USEPA comments to the July 5 submittal and pending comments from New Jersey Department of Environmental Protection on the Declaration of Conservation Restriction in the Wetland Mitigation Plan.

3.0 CONSTRUCTION OPERATIONS

Construction operations include the sequencing and coordination of the work activities including site preparation, soil excavation, backfill, traffic control, stream crossings, site maintenance (during construction), environmental controls, coordination with local authorities, as applicable, and site access control. The Construction Operations Plan (COP) was prepared in accordance with the SOW Section IX-B2f of the Consent Decree and is provided in Appendix A.

A detailed presentation of the sequencing and schedule of the construction activities is provided within the COP and is summarized as follows:

- 1. Mobilize.
- 2. Establish temporary facilities (e.g. office trailers, utility connections)
- 3. Survey site to establish work zone limits, waste removal areas, and haul roads.
- 4. Install soil erosion and sediment control measures.
- 5. Clear and grub within the work areas.
- 6. Excavate two-foot non-hazardous soil located underneath and adjacent to the haul road that must be installed.
- 7. Construct the haul road from New Brunswick Avenue to the existing water treatment plant including, but not limited to stream crossings and fence relocation.
- 8. Consolidate drums and sample existing stockpiled soils.
- 9. Decontaminate and remove the tanker truck.
- 10. Establish water control system.
- 11. Excavate, remove, characterize, transport, and dispose of identified hazardous soils and backfill excavated areas.
- 12. Excavate, remove, characterize, transport and dispose of non-hazardous soils.
- 13. Remove and reinstall the existing groundwater piping system.
- 14. Install topsoil, vegetate, and restore wetland.
- 15. Demobilize.

A description of the operational methods for the major construction activities and a site layout plan are provided in the COP. A list of equipment that will be mobilized to the site is also provided in the COP.

The construction operation procedures for handling excavated soils and wastes are described in the Waste Handling Plan (Appendix C) and the methods for characterization and disposal of the wastes are detailed in the Waste Characterization and Disposal Plan (Appendix B).

The procedures for protecting soil and water resources are addressed in the Environmental Protection Plan (Appendix D). The plan also addresses operational methods for dust control, odor control, noise control, and decontamination.

Security procedures to control access to the site and Exclusion and Contaminant Reduction Zones during the construction activities are described in the Security Protocol (Appendix E).

4.0 CONSTRUCTION QUALITY CONTROL

The construction quality control (CQC) includes quality control methods and procedures for establishing that the work is completed in accordance with the approved project plans and specifications. CQC procedures address documentation, inspections, testing and corrective actions. The section has been prepared in accordance with SOW Section IX-B2g of the Consent Decree.

4.1 INSPECTIONS

The RAC will conduct a series of at least three inspections for each major construction activity. A description of each inspection is described below.

4.1.1 Preparatory Inspections

Preparatory inspections will be performed by the QC Officer prior to beginning each major construction activity. The preparatory inspections will include the following:

- Review of the plans and specifications
- Confirm that materials and equipment have been tested, submitted and approved
- Examine work area to assure required preliminary work has been completed in accordance with the plans and specifications
- Confirm that materials, equipment, and sample work are available, conform to approved drawings or submitted data, and are properly stored
- Review of activity hazard analysis to assure safety requirements are met.
- Discussion of procedures for controlling quality of work.
- Confirm that the work to be performed has been accepted by the Trust's Representative.
- Discussion of the initial phase of the work.

4.1.2 Initial Phase Inspections

The QC Officer will perform an initial inspection when the construction activity begins on a representative portion of a major work element (e.g., demolition of concrete pads, excavation, site restoration, etc.) of the work. The preparatory inspections will include the following:

- Check workmanship is in compliance with the plans and specifications
- Verify adequacy of controls to ensure contract compliance.
- Establish level of workmanship and verify that it meets minimum acceptable workmanship standards
- Resolve problems or deficiencies
- Check safety

4.1.3 Follow-up Phase Inspections

The QC Officer will perform daily checks to assure control activities, including testing, are in compliance with contract requirements, until the construction activity is complete. Final follow-up checks will be performed and all deficiencies corrected prior to the start of additional construction activities which may be affected by the deficient work. The inspections will be documented and the documentation will be maintained on-site. Copies will be provided to the Trust's Representative.

4.1.4 Additional Preparatory and Initial Phase Inspections

The QC Officer will perform additional preparatory and initial phase inspections on the construction activity if:

- The quality of the work is unacceptable
- There are changes in the QC staff, on-site production supervision, or work crew
- The work is resumed after a substantial period of inactivity or if another problem develops
- At the request of the Trust's Representative.

4.2 TESTING PROCEDURES

The RAC will perform tests to verify that control measures, materials, and products are in conformance with the plans and specifications. The RAC will employ an independent geotechnical (Key Tech) and analytical testing laboratory (Chemtech) to perform analysis for the testing of fill materials and analytical testing of soils and wastes and provide the following data:

- Verify the testing procedures comply with the plans and specifications
- Verify that facilities and testing equipment are available and comply with testing standards
- Check test instrument calibration data against certified standards
- Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared
- Record results of all tests taken. Include specification paragraph reference, location where test(s) were taken, and the sequential control number identifying the test.

4.3 REPORTING PROCEDURES

After each test and analysis, the RAC will submit two copies of the laboratory's report to the Trust's Representative and maintain a copy of the reports on-site. The laboratory's report will include, at a minimum, the following information:

Geotechnical Laboratory	Analytical Laboratory
Laboratory name	Laboratory name
Date issued	Date issued
Project title and number	Project title and number
Name of inspector/sampler	Name of sampler
Sample identification	Sample identification
	i

Date and time of sampling or inspection	Date and time of sampling
Identification of product and specification sections	Date of Analysis
Location of project	Location of project
Type of inspection or test	Analytical method
Results of test	Results of analysis
Conformance with plans and specifications	QA/QC data, as applicable

4.4 SUBMITTALS

The RAC will maintain a daily submittal log to track submittals required by the plans and specifications. The RAC will also utilize a CQC Report to record all inspections, samples collected and test results on a daily basis.

5.0 SITE MANAGEMENT PLAN

This section has been prepared in accordance with SOW Section IX-B2a – c of the Consent Decree.

5.1 PROJECT TEAM ORGANIZATION

The organization of the project team and the relationships or lines of authority between the parties are illustrated in Figure 5-1. The roles and responsibilities of the identified organizations and individuals are summarized below.

Trust

The term "Trust" will refer specifically to the Chemsol, Inc. Superfund Site Environmental Remediation Trust. The Trust has agreed to perform response activities at the Chemsol, Inc. Superfund Site pursuant to the Consent Decree.

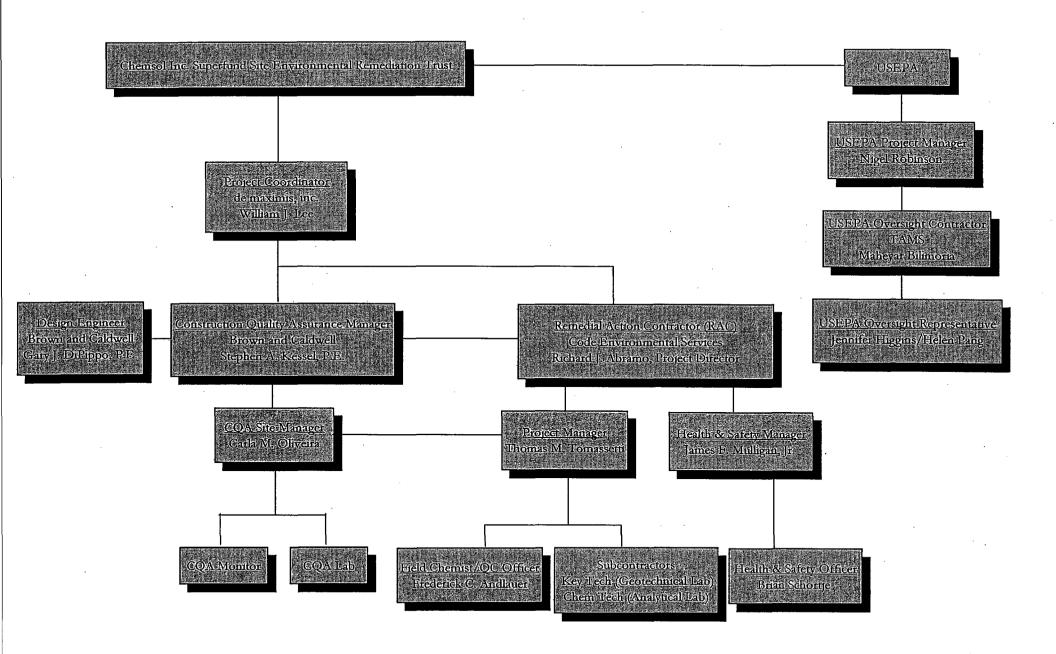
Project Coordinator

Mr. William J. Lee, de maximis, inc., will act as the Project Coordinator on behalf of the Trust. The Project Coordinator is responsible for overall project management and coordination between the Trust and the USEPA, and any other involved parties (e.g., design engineer, construction contractor, etc.). The Project Coordinator will also act as the Trust's Representative for the disposal of hazardous wastes (i.e., signing of waste manifests).

Design Engineer

The Design Engineer for RWE I is Brown and Caldwell, represented by Gary J. DiPippo, P.E. The Design Engineer is responsible for the design, drawings, CQAPP, and specifications, and is registered to provide engineering services in the State of New Jersey.

Figure 5-1
Remedial Action Project Team Organization
Remedial Action Work Plan, Remedial Work Element I, Soils
Chemsol Inc. Superfund Site



Construction Quality Assurance (CQA) Personnel

The CQA personnel are independent from the Contractor, Subcontractors, or Manufacturers. The CQA personnel are responsible for managing, coordinating, and implementing the CQA activities to confirm that the work conducted by the Contractor is achieving the quality objectives established in the CQAPP and is performed in accordance with the engineering drawings and specifications. The Trust's Representative may serve in the CQA role or may designate other personnel to serve in this role. The CQA personnel consist of the CQA Manager, the CQA Site Manger, and CQA Monitor(s) as described below.

- Stephen A. Kessel, P.E. will act as the CQA Manager. The CQA Manager is responsible for administering the CQA program and assigning and managing CQA personnel. Mr. Kessel is a registered professional engineer in the State of New Jersey and has demonstrated experience in working with CQAPP implementation and is familiar with the construction plans and specifications since he was involved with the design. Mr. Kessel will attend weekly site meetings and monitor progress of the construction activities.
- Carla M. Oliveira will act as the CQA Site Manager. The CQA Manager will act as
 the on-site Trust's Representative and is responsible for the on-site CQA activities as
 specified in the engineering drawings and specifications. Ms. Oliveira is familiar with
 both the CQAPP implementation and the construction plans and specifications. Ms.
 Oliveira will also act as a CQA Site Monitor when only one individual is needed on
 site to implement CQA.
- The CQA Site Monitor(s), if needed, may assist the CQA Site Manager where more than one individual is necessary on site to implement CQA and is responsible for onsite CQA activities as assigned by the CQA Site Manager. CQA Monitors, if needed, will be designated as the work progresses.

Remediation Action Contractor (RAC)

The RAC for the remedial action will be Code Environmental Services, Inc. The RAC is responsible for the implementation of the remedy, site health and safety, environmental protection, site maintenance, and construction quality control (CQC). The Remediation Contractor personnel will consist of a Project Director, Project Manager, Health and Safety Manager, Health and Safety Officer, and Quality Control (QC) Officer as described below.

- Richard J. Abramo will act as the Project Director for the RAC. The Project
 Director will have overall responsibility for the performance of the work. This will
 include compliance with the work plan, compliance with health and safety
 requirements, schedule, sequencing of the work, control of site conditions, control of
 waste material disposal (i.e., characterization, facilities, etc.), and final site restoration.
- Thomas M. Thomassetti will act as the Project Manager for the RAC. The Project Manager will be at the site during all times when the work is in progress. The Project Manager will be responsible for day-to-day activities at the site that will include compliance with the work plan, health and safety, work sequence, schedule, site security, excavation, waste characterization and disposal, site restoration, decontamination, and air monitoring. The Project Manager will report to the Project Director.
- James F. Mulligan will act as the Health and Safety Manager for the RAC. The Health and Safety Manger will be responsible for the overall content, proper implementation and maintenance of the Health and Safety Plan (HASP).
- Brian Schortje will act as the Health and Safety Officer (HSO) for the RAC. The
 HSO implements the HASP for the site. The HSO will be responsible for health
 and safety requirements for all aspects of the project from site preparation to
 excavation, to final site restoration. The site safety office will report to the Health
 and Safety Manager.

Frederick C. Andlauer will act as the QC Officer for the RAC. The QC officer will
be responsible for field implementation of the Construction Quality Control Plan
(CQCP) and for collecting required waste characterization samples.

CQC Laboratory

The RAC will retain a CQC laboratory to perform testing of soil (geotechnical and analytical), inspections, and other services required by the plans, specifications, and the Trust's Representative. The CQC Laboratory is independent from the RAC and material suppliers.

CQA Laboratory

QA activities may require testing of soil (geotechnical and analytical). QA testing will be limited, performed when required, and used to verify QC testing performed by the Contractor. The QA Laboratory is independent from the Contractor and Material Suppliers and is responsible for conducting tests in the laboratory on samples of soil, etc. collected during construction.

United States Environmental Protection Agency (USEPA)

Mr. Nigel Robinson will act as the Project Manager on behalf of the USEPA. In this role, Mr. Robinson will be the point of contact with the federal government for the transfer of information including progress reports, analytical data, etc. Mr. Robinson, on behalf of the U.S. Government, will review the collected data to confirm that the work is completed in accordance with the approved RAWP and associated documents.

USEPA Oversight

Mr. Maheyar Billimoria will act as Project Manager on behalf of TAMS and as Oversight Contractor for the USEPA. In this role, Mr. Billimoria will provide technical oversight of the project and confirm that the work is completed in accordance with the approved Work Plan and associated documents. Jennifer Higgins will act as the Oversight Representative at site during construction activities.

5.2 IMPLEMENTATION OF THE CQAPP

The CQAPP describes the quality assurance procedures for monitoring construction activities and documenting that the work is completed in accordance with the approved project plans and specifications. The CQA personnel for the Remedial Action at the site are presented on Figure 5-1.

The QA Site Manager will be responsible for implementing the QAPP at the site. The QA Site Manager is responsible for daily QA activities. A summary of the QA procedures (e.g., inspections, testing, documentation) for the QA Site Manager is provided in the QAPP. Decisions regarding QA testing and inspections will be made by the QA Manager. The QA Site Manager will coordinate daily with the RAC's QC Officer to exchange information on QC and QA inspection and testing results. Results of QA testing and inspection and other QA issues will be discussed at the weekly progress meetings.

5.3 CONSTRUCTION SCHEDULE

The construction schedule, as prepared by the RAC, is included in Appendix 3 in the COP. The schedule shows the sequence of the construction activities and each activity's duration. The schedule represents a fast-track approach based on agreement with USEPA to attempt to complete construction in 2001. If conditions exist that prevent completion on the fast-track, the schedule will revert to that presented in the approved RDWP (dated 12/2000) that governs the overall project schedule, which has a construction start date of February 18, 2002.

6.0 HEALTH AND SAFETY PLAN (HASP)

The RAC's HASP addresses the health and safety measures to be implemented at the site. The HASP and was prepared in accordance with CFR40.1920 and SOW Sections IX-B2d and IXB-B3 of the Consent Decree. The personnel designated as the Project Health and Safety Manager and the Health and Safety Officer are indicated on Figure 5-1. The HASP is provided in Appendix G.

The HASP also addresses personnel and equipment decontamination as described below.

6.1 DECONTAMINATION PROCEDURES

Personnel and equipment decontamination procedures will be performed in accordance with the RAC's HASP. The personnel decontamination area will be set up in the Contamination Reduction Zone (CRZ). The personnel decontamination procedures are described in Section 9.0 of the RAC's HASP.

Equipment and trucks will be decontaminated prior to exiting the work areas. Decontamination will be performed at the existing decontamination pad at the site. Decontamination water will be collected and transferred to the on-site treatment plant. The equipment decontamination procedures are described in Section 9.0 of the RAC's HASP.

The Contingency Plan for the construction activities is included as part of the HASP (Appendix 5 of the HASP) provides a description of the procedures for spill control, fires and explosions, personal injuries, and site evacuation.

6.2 REMEDIAL ACTION CONTINGENCY PLAN

The Remedial Action Contingency Plan provides a description of the procedures for spill control, air releases, fires and explosions, accidents that may occur off-site and also includes the names of individuals responsible in the event of an emergency, local emergency response

agencies contact information as well as necessary emergency contacts and phone numbers. The Remedial Action Contingency Plan is provided in Appendix I.

7.0 OPERATION AND MAINTENANCE

The operation and maintenance (O&M) elements for the site, upon completion of the Remedial Action, will be composed of two phases. The first phase will be maintenance that is a part of the construction contract (e.g., establishing vegetation). The Contractor is responsible to the Trust for maintaining the vegetation during the first year after the Remedial Action is complete. The O&M activities will be performed in accordance with the Wetlands Mitigation Plan and specifications. The O&M activities for the first phase will consist of the following:

Wetland Areas

- Inspection by a wetland scientist
- Watering as needed to maintain adequate moisture for the plantings and soil.
- Timely reseeding and planting areas showing bare spots.
- Replace plants and trees that have not survived
- Repairing washouts or gullies.
- Protecting vegetated areas with warning signs or other demarcation during maintenance period
- Weeding, by hand, of invasive species such as common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*), to the extent determined by the wetland scientist during inspection.

Upland Areas

- Immediately reseeding and planting areas showing bare spots.
- Repairing washouts or gullies.
- Protecting vegetated areas with warning signs during maintenance period.

The second phase will be long-term O&M for the wetland areas that will occur for an additional four years following the first year of maintenance. It is anticipated that the upland areas will be self-sustaining after the first phase of the O&M. The long-term O&M will be

performed in accordance with the Wetlands Mitigation Plan and the specifications. The O&M activities will consist of the following:

- Inspection by a wetland scientist
- Watering as needed to maintain adequate moisture for the plantings and soil.
- Timely reseeding and replanting areas showing bare spots.
- Replace plants and trees that have not survived
- Repairing washouts or gullies.
- Protecting vegetated areas with warning signs during maintenance period
- Weeding, by hand, of invasive species such as common reed (*Phragmites australis*) and purple loosestrife (*Lythrum salicaria*) during the first year of the four years of O&M, as provided for in the Wetlands Mitigation Plan.

After five years, it is expected that the vegetation at the site will be self-sustaining and will require no additional maintenance. Long-term O&M of the site will include of quarterly site inspections to document conditions at the site and to inspect and maintain the perimeter fence.

The results of each monitoring visit for the wetlands O&M will be reported in an annual monitoring report. The report will include photographs from established photo stations, plant mortality data, species lists, and other information, including water level and wildlife observations.

8.0 PERMITS AND APPROVALS

The RD Report identifies the permit equivalents and approvals that are required for the implementation of the Remedial Action. A description of each permit equivalent and approval and the proposed methods to satisfy the permit equivalent requirements in accordance with SOW Section IX-B2e of the Consent Decree are described below.

8.1 FRESHWATER WETLANDS STATEWIDE GENERAL PERMIT EQUIVALENTS # 4 AND # 10

The New Jersey Freshwater Wetlands Protection Act (N.J.S.A. 13:9B) regulates activities within freshwater wetlands. Since the existing freshwater wetlands at the site will be disturbed by the planned Remedial Activities (e.g., excavation and stream crossing), General Permits # 4 and # 10, which are applicable to these types of disturbances, were prepared in accordance with N.J.A.C. 7.7A-9 and were submitted to NJDEP on June 1, 2001. As part of the permit application, a mitigation plan for on-site wetlands restoration was prepared in accordance with N.J.A.C. 7.7A-14. The permit equivalent is provided in Appendix H.

As part of the CQA activities, CQA personnel will observe and document the excavation, site restoration, and vegetating activities to verify that the work is being performed in accordance with the plans, specifications, and wetland mitigation plan.

8.2 STREAM ENCROACHMENT PERMIT EQUIVALENT

Construction in a flood plain is regulated by the Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq., and its regulations, N.J.A.C. 7:13. The NJDEP has verified a stream encroachment permit is required if the drainage area for the stream is greater than 50 acres. Since the drainage area for Stream 1-B at the site is approximately 52.3 acres, a stream encroachment permit equivalent application was prepared in accordance with N.J.A.C. 7:13 and was submitted to NJDEP on June 1, 2001. The permit equivalent is provided in Appendix H.

As part of the CQA activities, CQA personnel will observe and document the sediment excavation activities to verify that the required amount of sediment is removed. The backfilling, seeding, and placement of the erosion control matting in the stream will also be observed and documented by CQA personnel to verify that work is being performed in accordance with the plans, specifications, and permit equivalent requirements.

8.3 SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATE

A Soil Erosion and Sediment Control Plan has been prepared in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey and was submitted to the Town of Piscataway Planning Board on June 22, 2001. The Planning Board administers the soil erosion controls program in Piscataway and will review and issued a certificate of approval which is provided in Appendix H.

Soil erosion and sediment controls will be installed and maintained as specified in the Soil Erosion and Sediment Control Plan, engineering drawings, and specifications. The RAC will inspect the soil erosion and sediment control measures daily and will repair control measures as necessary.

8.4 BUCKEYE PIPELINE EASEMENT ACCESS APPROVAL

Buckeye Pipeline Company has agreed to the proposed improvements and temporary use of the easement for a construction access road. A letter and plans describing the work activities within the easements was sent to Buckeye Pipeline Company on March 30, 2001 to confirm approval of the proposed use of the easement. A letter of final approval from Buckeye Pipeline Company confirming approval of the proposed improvements and temporary use of the easement is provided in Appendix H.

Buckeye Pipeline Company will have a local operations employee at the site during the excavation activities within the easement to mark out the location of the pipeline and observe the excavation and backfilling activities within the easement

8.5 ELIZABETHTOWN WATER COMPANY EASEMENT ACCESS APPROVAL

Elizabethtown Water Company has agreed to the proposed improvements and temporary use of the easement for a construction access road. A letter and plans describing the work activities within the easements was sent to Elizabethtown Water Company on March 30, 2001 requesting approval of the proposed use of the easement. A letter from the Elizabethtown Water Company was received confirming approval of the proposed improvements and temporary use of the easement is provided in Appendix H.

Elizabethtown Water Company will have a local operations employee at the site during the excavation activities within the easement to mark out the location of the pipeline and observe the excavation and backfilling activities within the easement.

8.6 ARKO PAPER PRODUCTS ACCESS APPROVAL

The Arko Paper Products property owner has agreed to the construction of an access road across the inactive railroad spur on the property. The property owner has also agreed to the continuation of the access road within the property to the entrance onto New Brunswick Ave. The formal access agreement between the Trust and Arko Paper Products is provided in Appendix H.

8.7 LOCAL APPROVALS

While permits are not required pursuant to Paragraph 9 of Section V of the Consent Decree, the Contractor will solicit local approvals, as applicable. Such approvals may include a building permit, along with electrical and plumbing permits, for modifications to the treatment plant for the new forcemain. These approvals will be sought at the start of construction. Construction activities will be performed in accordance with local requirements.

APPENDIX A CONSTRUCTION OPERATIONS PLAN

CONSTRUCTION OPERATIONS PLAN

CHEMSOL, INC. SUPERFUND SITE REMEDIAL WORK ELEMENT I, SOILS

July 19, 2001 Revision No. 1

Prepared For:

de maximis, inc. 186 Center Street, Suite 290 Clinton, New Jersey 08809

Prepared By:

CODE ENVIRONMENTAL SERVICES, INC. 400 Middlesex Avenue Carteret, New Jersey 07008

CONSTRUCTION OPERATIONS PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

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CONSTRUCTION OPERATIONS PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

PLAN AUTHORIZATION

This Construction Operations Plan (COP) has been reviewed and hereby approved. By their signatures, the following undersigned certify that this COP meets the requirements of the Contract Documents.

Richard J. Abramo, President				Date
Code Environmental Services, Inc.				
•	.*			
			<u></u>	
Thomas M. Tomassetti, Project Manager	•			Date
Code Environmental Services, Inc.	* 6			
•			•	
			_	
Name, Title				Date
Company				
		,		
		•	•	
Name, Title				Date
Company				

CONSTRUCTION OPERATIONS PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

INTRODUCTION

The following Construction Operations Plan has been developed by Code Environmental Services, Inc. (hereinafter referred to as CODE or the Contractor) for the "Remedial Work Element I, Soils" contract to be performed at the Chemsol, Inc. Superfund Site in Piscataway, New Jersey.

This plan describes, in detail, the procedures that CODE will follow to implement the work required under the scope of this Contract. Specifically, this Plan addresses how the project will be staffed, sequenced, and constructed.

A copy of the approved Construction Operations Plan will be maintained on-site by CODE during remedial construction.

SECTION 1.0 Project Overview

Code Environmental Services, Inc. (CODE or the Contractor) has been retained by the Chemsol, Inc. Superfund Site Environmental Remediation Trust (the Trust) to perform the "Remedial Work Element I, Soils" contract at the Chemsol, Inc. Superfund Site in Piscataway, New Jersey.

CODE's contracted Scope of Work (SOW) includes:

- · Submittals;
- · Permits:
- · Mobilization;
- · Temporary facilities and utilities;
- Security;
- · Dust and odor controls;
- · Site maintenance;
- Health and Safety;
- · Decontamination:
- · Soil erosion and sediment controls;
- · Site clearing;
- · Site access improvements;
- · Traffic control;
- · Excavation:
- · Decontamination and removal of tanker truck;
- Removal and resetting of Well C-1 structure;
- · Removal and replacement of piping and associated electrical components;
- · Demolition and disposal of concrete slabs and foundations;
- · Backfilling;
- Removal and replacement of fence within limits of excavation;
- · Characterization and disposal of drums and waste soil stockpiles;
- · Waste characterization, transportation, and disposal;
- · Site restoration:
- · Wetlands restoration; and
- · Demobilization.

The above SOW shall be performed as specified in the Project Specifications and Contract Drawings and described in this Construction Operations Plan; the Waste Handling Plan; the Waste Characterization, Transportation and Disposal Plan; the Environmental Protection Plan; the Construction Quality Control Plan; and the Site-Specific Health and Safety Plan (HASP). The site shall be operated and maintained by CODE throughout the duration of the Contract as specified in the Plans and Specifications and as described in the referenced Contractor project plans. The requirements of the HASP shall be in effect from initial site mobilization through final demobilization.

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SECTION 2.0 **Project Organization**

2.1 PROJECT STAFFING

CODE will assign the following key management personnel to the Chemsol Inc. Superfund Site Remedial Work Element I, Soils project:

- · Project Director Richard J. Abramo;
- · Project Manager Thomas M. Tomassetti;
- · Field Chemist/Site QC Officer Fred Andlauer; and
- · Project Health and Safety Manager Brian Schortje.

In addition to the key management personnel identified above, CODE will assign up to three (3) operators, three to four (3-4) laborers, a Site Health and Safety Officer and various subcontractors to the project.

2.1.1 Personnel Responsibilities

The Project Director will be responsible for overall direction and completion of this project.

The Project Manager will report to the Project Director and will be responsible for direction and coordinating of field activities. The Project Manager shall serve as the Contractor's primary contact with the Trust's Representative. The Project Manager will be responsible for overseeing Contractor and Subcontractor Operations in the field and will report directly to the Project Manager.

The Field Chemist/Site QC Officer will report to the Project Director and will be responsible for field implementation of the Construction Quality Control Plan (CQCP) and for collecting all required waste characterization samples. The Field Chemist/Site QC Officer will assist the Trust's Representative in the collection of other required samples as directed.

The Project Health and Safety Manager will be responsible for the overall content, proper implementation, and maintenance of the HASP. That individual will report directly to the Project Director and will be represented in the field by the Site Health and Safety Officer (SHSO).

The SHSO will be responsible for field implementation of the HASP and for insuring the project team's compliance to the site-specific health and safety protocol established therein

2.1.2 Personnel Qualifications

Resumes for the key project personnel identified in Section 2.1 are provided in Appendix A, which will be updated during performance of the work in the event of any changes. All personnel assigned to the project site will be 40-hour trained and medically monitored in accordance with 29 CFR 1910.120 (see HASP for details).

2.2 SUBCONTRACTORS

Subcontractors will be used in support of this contract for the following work items:

Company Name/Address	Area of Responsibility
Enviroscapes, Inc. Woodbridge, NJ 07095	Vegetation, Site Clearing, Wetlands Restoration
Kistler Paving, Inc. Iselin, NJ 08840	Asphalt Paving
Maser Consulting Mahwah,NJ	Licenced Surveyor

Transportation and disposal firms to be used in support of this Contract are identified in the separately-bound Waste Characterization, Transportation and Disposal Plan.

2.3 MATERIAL SUPPLIERS AND SOIL SOURCES

CODE plans to utilize the following material suppliers and soil sources in support of this Contract.

Company Name/Address	Item Supplied
Almasi Companies Woodbridge, NJ 07095	Subsoil, Topsoil, Stone
Design Plastic Systems Norristown, PA 19403	Plexco Culvert Pipes
JP McElvenny Co., Inc. Downington, PA 19335	SDR-11 HDPE Pipes
Montecalvo Construction Perth Amboy, NJ	Subsoil, Common Topsoil, Common Stone
Bayshore Recycling Corp. Perth Amboy, NJ	Dense graded aggregate (DGA) / Recycled Concrete

Code reserves the right to utilize other sources other than what is mentioned above. Alternate supplier information will be submitted to the Trust's Representative for approval in accordance with the Specifications.

2.4 LABORATORIES

Mountainside, NJ	Chemtech Mountainside, NJ	Analytical Laboratories
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Key - Tech	Geotechnical Testing Laboratory	Ī
Keyport, NJ		

SECTION 3.0 Sequence of Work

3.1 CONSTRUCTION SCHEDULE

The planned work sequence and duration for each major work task is graphically illustrated in the Construction Schedule, submitted separately and included with this Construction Operation Plan as part of the Remedial Action Work Plan.

CODE will update the approved Construction Schedule at least bi-weekly by entering actual progress thereon, which will be presented to participants at regularly scheduled progress meetings. The status of activities completed or partially completed at the end of each period will be shown, as will the end of work completed. CODE will submit a modified schedule in the event any Trust-authorized changes result in contract time adjustments.

3.2 NARRATIVE WORK SEQUENCE

Generally, the project will be sequenced as follows.

- 4. Prepare pre-work submittals.
- 5. Mobilize to site.
- 6. Set-up construction office.
- 7. Survey site to establish work zone limits, waste removal areas, and haul roads.
- 8. Set-up erosion control system for the project.
- 9. Clear site of trees and shrubs only in the work zones.
- 10. Excavate a two foot (2') cut of non-hazardous soil located underneath and adjacent to the haul road that must be installed.
- 11. Construct the haul road from New Brunswick Avenue to the existing water treatment plant including, but not limited to stream crossings and fence relocation.
- 12. Consolidate and characterize drums and characterize existing stockpiled soils.
- 13. Characterize, decontaminate and remove the tanker truck.
- 14. Establish water control system in the event that dewatering of excavations are necessary.

- 15. Excavate, remove, characterize, transport, and dispose of identified hazardous soils from the project and backfill excavated areas.
- 16. Excavate, remove, characterize, transport and dispose of non-hazardous soils as described in *Appendix B*. Excavation, transportation and disposal, and backfill operations will continue until all identified soils have been removed including material from the stream ditch area located at the northern portion of the property.
- 17. Remove and reinstall the existing groundwater piping system in accordance with the Specifications.
- 18. Install topsoil, vegetate, and restore wetland.
- 19. Secure site.
- 20. Demobilize.

SECTION 4.0 Equipment

CODE will mobilize the following materials and equipment to Project Site.

- · John Deere (JD) 330 Trackhoe;
- JD 644 Rubber Tire Loader;
- JD 650 Wide Track Dozer;
 - JD 690 Tramac Hammer;
- JD 410 Backhoe Loader;
- BW 213 Roller;
- · 21,000 Gallon Frac Tank (1-2);
- Dust Control Vehicle;
- Office Trailers;
- Miscellaneous Pumps and Hoses;
- · Modified Level D and Level C PPE;
- · Spill contingency equipment, and
- · Miscellaneous hand tools and equipment.

SECTION 5.0 Operations Plan

After Notice to Proceed has been issued, CODE will mobilize to the Site and construct the project as described in the following subsections.

5.1 COORDINATION WITH LOCAL AUTHORITIES

A meeting with the local officials has been scheduled prior to mobilization to orient the authorities on the Contingency Plans and to discuss the overall scope of the construction activities (including site activities, traffic control, emergency response, and health and safety) and the Contingency Plan. Local authorities include the Town of Piscataway Mayor, Piscataway Fire and Police Departments, South Plainfield Police Department, Muhlenburg Hospital will be sent a copy of the Contingency Plan. The Contractor, USEPA, Chemsol Inc. Superfund Site Environmental Remediation Trust's Representative, and Design Engineer will also be present at the meeting.

5.2 MOBILIZATION/ESTABLISHMENT OF TEMPORARY FACILITIES & CONTROLS

Personnel and equipment to be mobilized to the Site are identified in Sections 2.0 and 4.0 of this Construction Operations Plan, respectively. Temporary facilities and controls will be set-up and maintained as required by Specification Section 01500 and as described in the following subsections. The site will be set-up as shown in Appendix 2, Site Lay-Out Plan.

5.2.1 Utility Connections

Temporary electric, telephone, and water service will be brought into the staging and decontamination areas from the nearest existing utility tie-in locations. Temporary sanitary facilities will be set-up near the office trailers and adjacent to the decontamination area for worker's use.

CODE will obtain all necessary permits and/or permission to tie-in to existing utilities from the appropriate agencies/companies prior to utility installation or connection.

All temporary utilities and connections made during mobilization will be removed upon completion of work unless otherwise directed by the Project Engineer (a.k.a., the Trust's Representative - de maximis, inc.).

5.2.2 Temporary Controls

Temporary controls (i.e., barriers, security, water control, dust control, odor control, erosion and sediment control, noise control, pollution control and temporary protection) will be provided in accordance with the Specifications as detailed in the Environmental Protection Plan (EPP). All temporary controls will be removed and properly disposed of at an approved facility following completion of remedial site work in accordance with the Specifications and EPP (Appendix D).

5.2.3 Haul Road

CODE will establish and maintain the haul road as required by Specification Section 01500.1.8. The 15' wide haul (access) road will be constructed from New Brunswick Avenue to the existing water treatment system as shown in Appendix 2. Additional information regarding haul road construction, maintenance and use is provided in the Traffic Management Plan (TMP).

5.2.4 Site Organization

The Site will be divided into three major zones as follows.

- 1. The Exclusion Zone will encompass the areas of concern (AOCs), as well as any areas being utilized for the temporary storage of waste materials. The minimum level of protection in Exclusion will be modified Level D. Level C PPE will be utilized during hazardous soil excavation, tanker decontamination, and drum handling operations.
- 2. The Contamination Reduction Zone (CRZ) will be the transitional area between the identified "contaminated" and "clean" areas and shall provide for the transfer of equipment and materials from the Support Zone to the Exclusion Zone; the decontamination of personnel and clothing prior to entering the "clean" area; and the physical segregation of the "clean" and "contaminated" areas.

Equipment will be decontaminated before demobilization on the existing on-site decontamination pad. Any disposable, single-use sampling equipment will be collected and drummed after use on the Site as potentially hazardous waste. Non-disposable sampling equipment (e.g., split-spoon samplers, trowels, augers, etc.) will be decontaminated at portable decontamination stations adjacent to the exclusion zone, or at the on-site decontamination pad. A boot wash facility(ies) will be provided for personnel decontamination. Decontamination water will be collected for treatment in the existing on-site water treatment system.

3. The **Support Zone** will include a designated area adjacent to the Exclusion Zone. Personnel in the support zone will have immediate access to Level C PPE in order to respond to emergency situations in the Exclusion Zone.

CODE's Site Health and Safety Officer will be responsible for establishing, delineating, maintaining, and controlling access to the established work zones in accordance with the approved HASP.

5.3 SITE PREPARATION

Site preparation shall include site lay-out; utility mark-out; installation of erosion and sediment control measures, clearing, and establishment of waste staging areas.

5.3.1 Site Lay-Out

A licensed land surveyor will lay-out the areas to be remediated as shown on the Contract Drawings in accordance with Specification Section 01300, Item 1.5, FIELD ENGINEERING and 01300, Item 1.6, SITE SURVEYS. Areas of work will be clearly delineated through the placement of different colored stakes and ribbons. CODE will protect the survey control points prior to starting site work and will preserve permanent reference points during construction. The Project Manager will promptly notify the Engineer if a reference point is lost or destroyed or if relocation is required due to changes in grade or other reasons. The surveyor then will be instructed to relocate and replace the dislocated survey control point(s).

The surveyor will locate and stake out the limits of excavation and limits or work as indicated on the Contract Drawings using the most recent available horizontal and vertical control datum. Wetland boundaries also will be located and staked out within the limits of work as indicated on the Drawings. Each limit will be field located with different colored stakes at a minimum frequency of one stake per 25 feet.

The surveyor will provide a certified survey site plan for Pre-Excavation Conditions (i.e., existing), Post-Excavation Conditions, and Site Restoration Conditions (i.e., final). The certified, survey site plans will include the area that extends 50 feet beyond the limits of work (25 feet beyond the construction access road limits of work) as indicated on the Drawings and be presented on a 1-inch equals 50 feet scale and include 1-foot contours. Spot elevations will be provided on a 25-foot grid for the area and for the ground surface and well casing at all of the wells shown on the Contract Drawings. The same 25-foot grid will be used for all surveys.

The survey site plans will horizontally locate the property boundary, easements, on-site structures, concrete pads, fencing, wells, limits of excavation and work, wetland boundaries and existing utilities. Any discrepancies between the site surveys and Contract Drawings will be brought to the immediate attention of the Engineer.

5.3.2 Utility Mark-Out

At least three (3) days prior to commencing subsurface activities, CODE will contact New Jersey One-Call (1-800-272-1000) to request utility mark-out. Identified utilities will be protected throughout the course of construction operations.

5.3.3 Erosion and Sediment Control

Erosion and sediment controls will be installed and maintained in accordance with Specification Section 02931, EROSION AND SEDIMENT CONTROL, and the Environmental Protection Plan. The Project Manager (or his designated representative) will inspect erosion control measures daily throughout the duration of the project to determine if cleaning or repair is required. Necessary repairs to the soil and erosion controls will be made and documented. The Engineer will be informed of any unusual observations noted during these daily inspections.

5.3.4 Clearing

CODE will clear designated work zones of trees and shrubs in accordance with the Specification Section

02230, SITE CLEARING. Clearing operations will be limited to that necessary for work zone access and soils/sediment removal. Trees/vegetation outside the limits of excavation will be maintained/protected to the extent practical.

5.3.5 Staging Areas

CODE is planning to direct load excavated material. Therefore, the use of temporary soil stockpiles is not anticipated. However, if temporary staging/stockpile areas are required, CODE will locate them adjacent to the excavation. Excavated soils will be staged/stockpiled in accordance with Specification Section 02300.

5.4 SITE MAINTENANCE

CODE will maintain the Site as specified in Section 01120, SITE MAINTENANCE. Specifically, CODE will collect and properly containerize all accumulated material, including discarded health and safety equipment. Periodic cleaning will be conducted to keep the project site free from accumulation of material resulting from Project work. Trash and garbage wastes will be placed in appropriate waste containers at the end of each day and disposed of by CODE in accordance with applicable federal, state, and local regulations. Public streets will be continually maintained free of dirt, dust, and debris and rake from vehicles entering and exiting the site. The Project Manager (or his designated representative) will be responsible for inspecting the site (including the haul and clean roads at least daily during active site operations) to ensure that it is properly maintained. The Project Manager will jointly inspect the site with the Trust's Representative at project end to certify that the entire project area is free of all extraneous materials generated from CODE's on-site operations.

5.5 PROJECT MEETINGS

Key CODE project personnel will attend pre-construction, site mobilization, progress, and problem or work deficiencies meetings in accordance with Solicitation Section 01300, Items 1.7. 1.8, 1.9 and 1.10, respectively. The Project Manager (or his designee) will record minutes of the meetings and distribute copies to the meeting's participants.

5.6 SUBMITTALS

As stated in Section 3.6 of the CQCP, all submittals will be coordinated through the Project Manager. CODE will adhere to the Submittal procedures set forth in Specification Section 01330 as described in Section 3.0 of the CQCP.

5.7 PHOTO DOCUMENTATION

As stated in Section 3.4 of the CQCP, CODE will take a minimum of 24 photographs per week of site activities during the progress of the work. The date, location, and description of each photograph will be recorded on the Photo Log provided in CQCP, Appendix 2 as will the photographic print and roll numbers. Photograph will be delivered to the Trust's Representative on a monthly basis with the

Application for Payment as directed in Specification Section 01330, Item 1.10.I. The Project Manager will be responsible for maintaining the Photo Log.

5.8 CERTIFICATION OF CLEAN FILL SOURCES

CODE will submit certification by the material source to confirm the proposed Clean Fill conforms to or exceeds the Material Requirements set forth in Specification Section 02300, Part 2. Conformance QC Testing will be conducted as required in the Specifications as detailed in the CQCP.

5.9 DRUM CONSOLIDATION AND STOCKPILED SOILS SAMPLING

CODE's field chemist will be responsible for drum sampling and waste soil pile sampling.

Approximately 1,450 cubic yards of excavated are present on site in a Waste Pile. In accordance with Specification Section 02325, Item 3.2.B, the soil in this waste pile will be characterized consistent with the protocol presented in the NJDEP Guidance Document for Remediation of Contaminated Soil, and required TCLP analyses based on the known on-site contaminants to meet waste disposal facility guidelines. (See Table - A)

Approximately 368 drums of waste were generated during previous soil boring and well installation at the site. The drummed waste includes soil, drill cuttings, drilling fluid, and personal protection equipment. The drums will be separated and grouped based on contents (drill cuttings, PPE, debris, etc.) and where the contents came from on the site. For example, drums containing drill cuttings generated from the area where the most elevated TVO concentrations are present, as shown on the Drawings, will be grouped together.

CODE will sample 10 % of the drums in each group for waste characterization analyses (TCLP) based on the known site contaminants (i.e., PCBs, lead, and VOCs). The field chemist will access each drum to collect a sample after decanting any standing water from the top of drum. A composite sample will be will be prepared and shipped to the designated laboratory for the required analyses.

Based on analytical results, CODE anticipates that it will be able to dump the drummed material and mix it with the soils for off-site disposal. Emptied drums will be decontaminated and sent off-site for disposal as scrap. If the drummed material can not be mixed with excavated soils, drums will be staged separately, over-packed (if needed), and disposed off-site at an approved disposal facility.

Drum handling and waste soil pile sampling/handling operations will be conducted in Level C PPE in accordance with Specification Section 02325, Item 3.2.A and the Waste Characterization, Transportation and Disposal Plan.

5.10 TANKER DECONTAMINATION AND REMOVAL

CODE will access the tanker truck by cutting a hole in its side. A sample of the contents will be collected for characterization (TCLP). If the contents are non-hazardous, the contents will be transferred to the treatment system. If the contents are hazardous, the contents will be disposed off-site

in accordance with federal, state, and local regulations. The interior then will be decontaminated utilizing a high pressure washer. Decontamination water will be contained for treatment in the on-site water treatment system. Residual waste will be collected for off-site disposal with the drummed material. The decontaminated trailer will be disposed of off-site as scrap at an approved metals recycling facility.

Tanker decontamination operations will be conducted in Level C PPE in accordance with Specification Section 02325, Item 3.6 (MINOR DEMOLITION - REMOVAL OF TANKER TRUCK) and the Waste Characterization, Transportation and Disposal Plan.

5.11 WELL C-1 STRUCTURE AND PIPING REMOVAL

The Well C-1 Structure, groundwater recovery piping and pipe supports, and effluent piping will be disconnected and temporarily removed to facilitate excavation and removal operations in accordance with Specification Section 02225, Items 3.3 and 3.5. Restoration of these structures will be conducted as stated in Section 5.8 of this Plan.

5.12 DEMOLITION

The concrete pads and foundations identified on the Contract Drawings will be demolished via hydraulic breaking using a John Deere 690 Excavator equipped with a 950 Tarmac Hammer. The concrete materials will be broken into approximately one-half cubic yard size; decontaminated (as necessary), loaded into a dump truck; and transported off-site to a concrete recycler in accordance with the Waste Characterization, Transportation and Disposal Plan.

5.12.1 Dust, Odor and Noise Control

Dust, noise, and odor control will be implemented in accordance with Specification Section 01520 and the Environmental Protection Plan.

CODE will control the amount of dust resulting from demolition operations to prevent the spread of dust to occupied portions of the construction site and to avoid creation of a nuisance in the surrounding area. Water misting equipment will be utilized for dust control during demolition operations as deemed necessary by the SHSO. Work area air monitoring to determine the need for dust control will be performed by the SHSO as specified in Section 7.0 of the HASP.

5.12.2 Protection

CODE will take all necessary measures to protect existing property and the environment during the performance of the work.

Before beginning any demolition work, CODE will carefully survey the site and examine the Drawings and Specifications to determine the extent of work. Necessary precautions (i.e., utility mark-out, the

use/ maintenance of shoring bracing, and supports, appropriate operational procedures, etc.) will be used to avoid damage to existing, nearby structures.

Traffic control measures will be implemented in accordance with the Traffic Management Plan to minimize interference with the site access road.

All personnel involved in demolition operations will adhere to the Safe Work Practices provided in the HASP.

5.13 MATERIAL EXCAVATION, REMOVAL, AND BACKFILL

Earthwork operations will be conducted in accordance with Specification Section 02300, EARTHWORK AND MATERIALS, and as described the Waste Handling Plan. In general, all earthwork will be constructed to the elevations, lines, grades, and cross sections shown on the Contract Drawings and in accordance with the Technical Specifications unless otherwise directed by the Project Engineer. Placement of subsoil will be limited to 12-inch lifts. Subsoil will be compacted to a density adequate to produce a surface that is stable and free of distortion under the load of the backfilling equipment (dozer or trackhoe). At a minimum, the contractor will make four passes with track-mounted earthwork equipment. Subsoil placed over coarse stone will be a minimum of 12 inches thick (in place, after grading, rolling, and compaction).

Structures, utilities, sidewalks, pavements and other facilities within or immediately adjacent to excavation areas will be protected from damage created by earthwork operations.

Erosion and sediment controls will be installed and maintained in accordance with Specification Section 02931 and as stated in the Environmental Protection Plan. Stormwater protection measures will be implemented to protect excavation subgrades and to prevent surface water from entering excavations, from ponding on prepared subgrades, and from flooding the project site and surrounding areas. Dewatering will be performed as deemed necessary by the Project Manager in accordance with Specification Section 02228, WATER CONTROL, and as described in Section 2.0 of the Waste Handling Plan.

Utility mark-out will be requested prior to initiating excavation operations as described in Section 5.2.2 of this Construction Operations Plan.

5.14 SITE RESTORATION

Once excavation, removal, and backfill operations are complete, CODE will reinstall the existing groundwater piping system in accordance with Specification Section 02610, PIPE CULVERTS.

Asphalt pavement will be installed in the locations indicated on the Contract Drawings as required by Specification Section 02510, ASPHALTIC CONCRETE PAVEMENT. The perimeter fence will be restored to pre-existing conditions and gates installed as shown on the Contract Drawings and required by Specification Section 02510, CHAIN LINK FENCES AND GATES.

Topsoil will be installed and required vegetation established in accordance with Specification Sections 02300 EARTHWORK AND MATERIALS, 02923, LANDSCAPE GRADING, and 02924, SEEDING

AND SOIL SUPPLEMENTS. Wetlands restoration will be performed by CODE's specialty subcontractor (see Section 2.2) as directed in Specification Section 02925, WETLANDS RESTORATION.

The site then will be secured and equipment demobilized.

SECTION 6.0 Demobilization and Contract Close-Out

6.1 PROJECT RECORD DOCUMENTS

All specified project documentation will be maintained at the site in a separate file. This documentation will remain at the site in CODE's trailer from mobilization through demobilization and will, at a minimum, include one copy of drawings, Specifications, addenda, reviewed shop drawings, change orders, other modifications to the contract, field test records, all correspondence, transportation and disposal documentation, and drawings reflecting "as-built" conditions.

The as-built marked prints showing work in progress will always be available for inspection. As work is completed in each area, the marked drawings will be submitted for approval. Final as-built drawings will be generated and filed on-site. Any samples and test results will be maintained in a similar manner.

At project conclusion, these documents will be gathered with a cover letter of explanation and delivered to the Engineer. This will be done prior to issuance of the final acceptance certificate allowing final payment.

6.2 PUNCH LIST AND FINAL INSPECTION

At the final construction conference, CODE will request the final inspection. The Engineer then will prepare a "punch list" of activities or items that need to be addressed for project close-out. CODE will promptly initiate work to complete all items on the punch list. When this work has been completed to the Engineer's satisfaction, the certificate of substantial completion will be issued. CODE will cooperate with Trust representatives in their activities relating to coordinating EPA inspection requirements.

Final site clean-up procedures and demobilization then will be accomplished by CODE. Final inspection will be performed by the Engineer final clean-up and demobilization. If satisfied, the Engineer will issue the final acceptance certificate to the Contractor.

6.3 DISCONTINUANCE OF UTILITIES

At issuance of certificate of substantial completion, CODE will begin to disconnect all utilities brought to the project site. Final payments will be made to each supplier, and proof thereof will be supplied to the Engineer. As clean-up activities are finalized, all support materials (i.e., safety fencing, signage, erosion control devices, etc.) will be disposed of off-site, and final grading and restoration operations will begin.

All additional items installed by CODE (barriers, utility supports, etc.) then will be removed as required.

6.4 AFFIDAVIT IN REGARD TO LIENS

At the receipt of the certificate of substantial completion, CODE will make final payments to all subcontractors and suppliers no longer being utilized. With the final payments CODE will require the suppliers (materials and services) to complete and return a release of liens against this project. A copy of these releases will be part of the final report package issued to the Engineer prior to generation of the final acceptance certificate.

APPENDIX 1 Qualifications of Key Project Personnel

RICHARD J. ABRAMO Project Director

EDUCATION:

B.S., Biology (Special Emphasis Chemistry), St. Francis College, 1980

EXPERIENCE:

Mr. Abramo has over 21 years' experience in the hazardous waste industry. During that period he has participated in and/or managed hundreds of emergency response, decontamination, Superfund and State-mandated remediation projects.

President · Code Environmental Services, Inc. · Carteret, New Jersey · 1989 - Present.

Mr. Abramo manages all corporate activity and is directly responsible for profit and loss status, budgeting, estimating, technical review, regulatory interaction and purchasing. He also is responsible for contract review and negotiation, client interface, job performance, QA/QC, equipment, personnel and risk evaluation.

Regional Operations Manager · ENSCO Environmental Services, Inc. · Edison, New Jersey · 1986 - 1989.

Mr. Abramo established a company presence in the New York/New Jersey metropolitan area and was responsible for contract operations, regional profit and loss status, estimating, budgeting, personnel management, accounting and purchasing.

Mr. Abramo was instrumental in establishing ENSCO's only TSDF for handling and processing lab packs. He personally took ENSCO's Dalton, Georgia facility from the earliest permit submittal stage through facility construction and finally to actual start-up.

Another area in which Mr. Abramo was actively involved was ENSCO's transportable incineration program. As operations manager of a \$9 million on-site incineration project for the United States Air Force in Gulfport, Mississippi, Mr. Abramo oversaw RCRA Part B equivalent permit submittal, site preparation, incinerator mobilization and construction, incinerator trial burns, contaminated soils excavation, and all other project activity associated with the on-site incineration of over 35,000 tons of dioxin-laden soil.

Mr. Abramo also took a key role in preparing a Modified RCRA Part B Certification for ENSCO's \$12 million transportable incineration project at the Lenz Oil Superfund site in Lamont, Illinois.

Based on his experience at the Gulfport and Lenz Oil sites, Mr. Abramo was assigned to direct ENSCO staff engineers in modifying the incineration system to address real-time field application.

District Manager, Project Manager, QC Supervisor, Emergency Response Coordinator · CECOS Environmental, Inc. · Staten Island, New York · 1980 - 1986.

Mr. Abramo managed CECOS' New York City district office and, in addition to hundreds of emergency response projects, was responsible for numerous, multi-million dollar remediation contracts.

RICHARD J. ABRAMO

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EXPERIENCE (Continued):	
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For example, Mr. Abramo provided contract interpretation and overall supervision of a \$4.5 million drum removal project at Ciba-Geigy Corporation's New Jersey facility. By contract end, 15,475 waste drums buried in the client's cell number two landfill had been excavated and disposed of off-site.

Mr. Abramo also managed the \$3.95 million Resolve, Inc. Superfund site remediation conducted under the direction of the U.S. Army Corps of Engineers. Operations involved the excavation, transportation and disposal of 14,000 cubic yards of PCB/organic-contaminated soil.

Mr. Abramo was assigned key roles during both phases of the Lehigh Electric Facility Superfund Site remediation project. He was the Phase I QC supervisor/emergency response coordinator and the Phase II project manager. Phase I entailed removal and disposal of 1,500 PCB transformers and 1,200 PCB capacitors. Phase II involved excavation of 11,500 cubic yards of PCB-contaminated soil, demolition, backfill, final grading, topsoil and seeding. This was the first Superfund site to be de-listed from the NPL and was remediated for approximately \$3.6 million.

As project manager responsible for the construction of three 600,000 gallon settling basins at the Exide Mill Pond site, Mr. Abramo supervised the removal and dewatering of 4,100 cubic yards of pond bottom sediments. This included coordinating work between a number of independent subcontractors responsible for dredging and dewatering. Mr. Abramo managed site operations and directed final contract close-out.

CERTIFICATIONS:

Hazardous Waste Supervisor per Requirements of 29 CFR 1910.120.

SPECIAL TRAINING:

40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.

8 Hour Supervisor's OSHA Health & Safety Training Course for Hazardous Waste Site Activities.

THOMAS M. TOMASSETTI Project Manager

EDUCATION:

B.S., Earth Physical Sciences (Geology), Kean College, 1990. A.S., Construction Technology, San Antonio College, 1985

EXPERIENCE:

Mr. Tomassetti has over 18 years' experience in the environmental and general construction industries. In addition to contract supervision, he has extensive estimating and computer operations experience.

General Manager (1994 - Present), Operations Manager (1993 - Present), Senior Estimator (1991 - 1993) · Code Environmental Services, Inc. · Carteret, New Jersey · 1991 - Present.

Mr. Tomassetti maintains fiscal responsibility for all CODE operations. He also is responsible for establishing and implementing company policy and procedure, evaluating project QA/QC and profitability, reviewing contracts, obtaining required insurance and bonding, reviewing and approving subcontracts, and evaluating proposals before release. In addition, Mr. Tomassetti oversees CODE's computer operations system conducting personnel training, computer maintenance, and upgrading of both network & software programs.

As operations manager, Mr. Tomassetti was responsible for personnel management, purchasing, project scheduling, job set-up, ensuring project-specific equipment/manpower requirements were met, and monitoring project performance.

Mr. Tomassetti has managed/administered a wide variety of remediation contracts including facility decontamination/demolition, soil excavation and slag cover installation projects for Reichhold Chemicals company, containerized material handling/disposal and contaminated soil excavation projects at the Scoville Brass site in Connecticut, and tank farm closure, contaminated stream excavation and vapor extraction system soil remediation pile construction projects at a United Technology Corporation site in New Jersey.

Mr. Tomassetti also served as project administrator of a \$2.1 million lagoon capping and closure contract in Hazleton, Pennsylvania. As such, he coordinated submittals, scheduled site operations, prepared the budget, secured required materials, supplies and equipment, executed subcontract agreements, and managed site personnel in the performance of contract operations.

Mr. Tomassetti managed site operations at CODE's \$250,000 UST removal contract for the New Jersey Department of Transportation in Sparta, New Jersey. In addition to the tank removal work, Mr. Tomassetti supervised the construction of a road and a concrete storm drainage system.

Mr. Tomassetti previously served as CODE's senior estimator.

Cost Engineer/Foreman · Yonkers Contracting Company · Yonkers, New York · 1985 - 1991.

Mr. Tomassetti joined Yonkers (one of the nation's largest contractors) as a project foreman in the Summers of 1985 and 1986. He became a full-time foreman in 1987 and was later promoted to cost engineer.

THOMAS M. TOMASSETTI

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As cost engineer, Mr. Tomassetti played a key role in the \$98 million Route 18 construction project for the NJDOT. During the project, three miles of roads were constructed through sensitive wetlands. As foreman, Mr. Tomassetti supervised work associated with the \$96 million Route 78 road project through the Watchung Wildlife Preserve.

Additional NJDOT work to which Mr. Tomassetti was assigned included management of the Route 24 Morristown project which included wetlands management and construction through PCB contaminated areas. Mr. Tomassetti was responsible for all environmental work and development of computer cost programs.

General Job Foreman · Cris-Tech Associates · 1984 - 1985.

Mr. Tomassetti served as general job foreman of Cris-Tech's \$10 million Southland Corporation project which involved the installation of three pumping stations and a storm water recovery system with two lined retention ponds.

CERTIFICATIONS:

Hazardous Waste Supervisor per Requirements of 29 CFR 1910.120.

SPECIAL TRAINING:

40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.

8 Hour Supervisor's OSHA Health & Safety Training Course for Hazardous Waste Site Activities.

FREDERICK C. ANDLAUER Field Chemist/QC Officer

EDUCATION:

B.S., Environmental Studies, East Stroudsburg University, Pennsylvania, 1985.

EXPERIENCE:

Mr. Andlauer has over 16 years of experience in the analysis, handling and disposal of waste laboratory chemicals. He is highly skilled in waste consolidation, packaging, completion/review of inventory lists, manifests and labels, and drum tracking.

Lab Pack Manager, Site Supervisor, Field QA/QC Officer · Code Environmental Services, Inc. · Carteret, New Jersey · 1989 - Present.

As the company's lab pack manager, Mr. Andlauer is responsible for managing CODE's annual waste disposal contracts, supervising the company's team of project chemists, purchasing lab pack supplies, and updating/recording all current state and federal laws and regulations relating to the proper shipment and disposal of hazardous waste.

- 3. Supervised CODE's \$600,000 per year annual lab pack contract with Rutgers, The State University of New Jersey. In addition to waste identification, handling, packaging, transportation and disposal, implemented creative bulking and recycling programs which have resulted in considerable cost savings for Rutgers.
- 4. Supervised the packaging and disposal of large quantities of various mercury waste streams (i.e., broken mercury thermometers mercury compounds, and laboratory glassware) generated by Rutgers University at seven campuses and 14 field stations. The work was conducted as part of the company's multi-year service contract with Rutgers. Also detached from their mountings, and occasionally drained over 100 mercury filled manometers, barometers, x-ray tubes, bubble flasks, and a variety of other specialized instruments.
- 5. Manage CODE's annual lab pack contract with FMC Corp. of Princeton, New Jersey. In support of this contract, provide quality control checks of client-packaged waste, conduct waste inventories, package "special" wastes such as dioxin-bearing material, and arrange transportation and disposal.
- 6. Managed waste disposal contract for Pharmacontrol Corporation at its Private Formulations, Inc. facility in Edison, New Jersey. Directed CODE's chemists in implementing a company-designed lab pack and hazardous waste disposal program at this location.
- 7. Supervised waste disposal contracts for the Paterson Board of Education (service contract to inventory, package and remove approximately 75 drums of lab pack and bulk quantity waste from four locations).
- 8. Supervised multiple contracts for the U.S. Coast Guard to identify, transport and dispose of lab pack and maintenance chemicals, paint and other wastes from a former supply center in Brooklyn, New York.



FREDERICK C. ANDLAUER

Page Two

EXPERIENCE (Continued):

- 10. Designed and implemented several mercury spill clean-up programs at various Rutgers University locations. Cleaned-up of spilled mercury from several broken thermometers in Hedley Laboratories building on the Cook campus. Collected free mercury and decontaminated a floor area and table surface at the Nelson Biology building on the Busch campus. Collected mercury which had burst from mercury thermometers and mercury containing flasks during a fire in a laboratory in the Busch campus Wright-Reiman laboratory building.
- 11. Participated in the excavation and removal of over 30,000 cubic yards of PCB contaminated soil located at three Texas-Eastern sites in Linden, Lambertville, and East Hanover, New Jersey. As field chemist was responsible for the collection of post-excavation and waste classification samples.
- 12. Participated in the excavation, transportation, and off-site disposal of 14,000 tons of PCB contaminated soils from the Goose Farm Superfund Site in Plumstead Township, New Jersey.

Lab Pack Coordinator · ENSCO Environmental Services, Inc. · Amherst, New York · 1987 - 1989.

Mr. Andlauer's responsibilities included in-field identification of chemical and hazardous wastes for segregation and proper packaging, arranging for transportation and disposal of packaged wastes, facility clean-out and decontamination of affected rooms and equipment, and completing required paperwork and documentation. Served as field chemist/chemical technician on several PCB decomissioning projects which involved removal of PCB-containing electrical devices and equipment, surficial decontamination of PCB-contaminated surfaces, and excavation of PCB-contaminated soil.

Field Analyst · Chemical Waste Management · Princeton, New Jersey · 1985 - 1987.

Mr. Andlauer supervised the preparation of laboratory chemicals and bulk waste streams for shipment to disposal.

Research Associate · East Stroudsburg University · 1985.

In addition to his field-related experience, Mr. Andlauer studied the effects of acid precipitation in Southeastern Monroe County, Pennsylvania.

SPECIAL TRAINING:

- 40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.
- 8 Hour Supervisor's OSHA Health & Safety Training Course for Hazardous Waste Site Activities.
- 8 Hour USDOT HM 126F/181 Course given by Reactive & Explosive Materials Training Corporation at the Middlesex County Fire Academy, March 10, 1993.

JAMES F. MULLIGAN, JR. Project Health and Safety Manager

EDUCATION:

Graduate Studies in Geology, Montclair State College, Montclair, New Jersey, 1978. B.S., Environmental Science, Stockton State College, Pomona, New Jersey, 1976.

EXPERIENCE:

Mr. Mulligan has over 14 years of experience in the environmental industry. He is an experienced manager, supervisor, safety officer, and QA/QC officer.

Project Manager, Safety Officer, QA/QC Officer · Code Environmental Services, Inc. · Carteret, New Jersey · 1998 - Present.

- Mr. Mulligan is responsible for managing projects and site operations; implementing Quality Assurance and Quality Control Programs, and enforcing Site-Specific Health and Safety Plans.
- 13. Successfully manage the planning and implementation of several projects (i.e., boom installation, emergency response marine oil spills, USCOE activities).
- 14. Direct project cost estimating, allocate and schedule resources for projects.
- 15. Coordinate activities of subcontractors on projects.
- 16. Analyze each project for regulatory, client, health and safety compliance.
- 17. Resolve technical questions and make timely decisions to keep projects on schedule.
- 18. Assist subordinate supervisor and manage equipment operators and technicians; also responsible for interviewing, hiring, scheduling and evaluating.
- 19. Conduct safety audits and monitor the safety of the field crew. Consistently lead tailgate meetings.
- 20. Interact and work with government agencies such as NJDEP, USCG, USEPA, USACOR, NYDEC.
- 21. Managed mercury spill clean-up, sampling, and T&D project at the Canrad-Hanovia Lamp Division facility in Newark, New Jersey. Oversaw collection, packaging and off-site T&D of all mercury filled devices located in seven multi-story buildings. Directed mercury spill clean-up and contaminant delineation efforts in several areas of the facility.
- 22. Supervised the dismantlement and packaging for off site T&D of 42 mercury filled manometers located at Cytec's Linden, New Jersey facility.

23. Managed multiple PCB remediation efforts under a multi-year remedial service agreement with Cytec, Inc. Directed excavation and off-site T&D of PCB-contaminated soils. Supervised decontamination of PCB contaminated concrete surfaces.

JAMES F. MULLIGAN, JR.

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EXPERIENCE (Continued):

Emergency Response Coordinator, Field Specialist · Clean Harbors, Inc. · Edison, New Jersey · 1995 - 1997.

Mr. Mulligan primary responsibilities included management of remedial field services associated with the company's CONED contract. The primary contaminant of concern associated with these remedial services was PCB leaking from transformers and other electrical equipment. Remedial efforts involved both soil and water spill clean-up. Also directed an extensive number of surficial PCB decontamination efforts.

Project Manager · Environmental Products & Services · Linden, New Jersey · 1994 - 1995.

Environmental Surveillance · Self Employed · 1992 - 1994

 $\textit{Project Coordinator/Region Sales Representative} \cdot \textbf{International Technology} \cdot \textbf{Avenel, New Jersey} \cdot \textbf{1987} - \textbf{1992}$

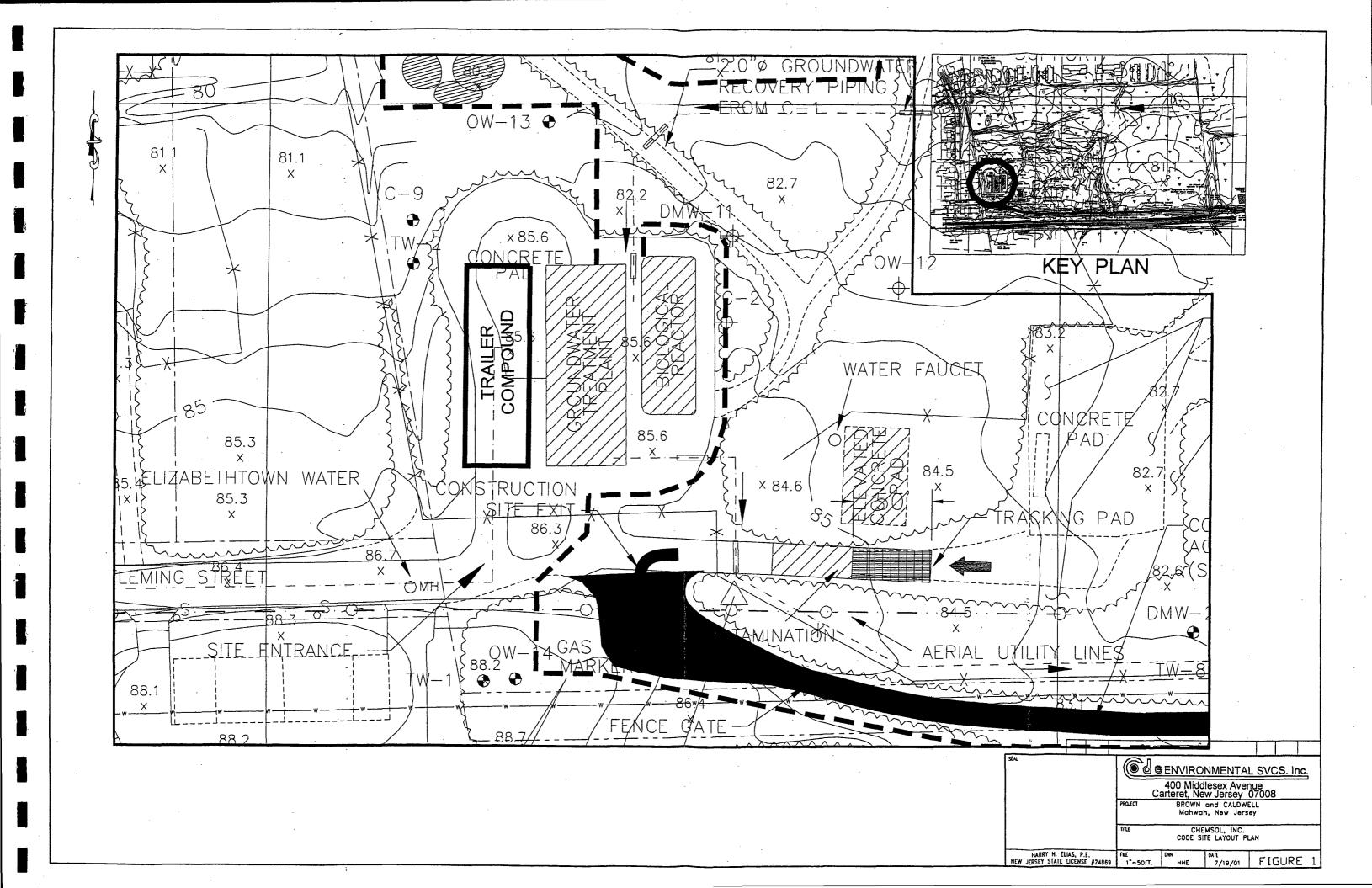
CERTIFICATIONS:

State of New Jersey Department of Environmental Protection "Closure" License # 0015245

SPECIAL TRAINING:

Advanced Project Management
First Aid/CPR Training
40 Hour OSHA Health & Safety Training Course for Hazardous
Qualified Persons Training
Hazardous and Protection Training
Waste Operation Supervisor Training
Emergency Response Training
Supervisor Remediation Training
Quality Assurance/Quality Control (40 Hours)

APPENDIX 2 Site Lay-Out Plan



APPENDIX B

WASTE CHARACTERIZATION, TRANSPORTATION, DISPOSAL PLAN

WASTE CHARACTERIZATION, TRANSPORTATION AND DISPOSAL PLAN

CHEMSOL, INC. SUPERFUND SITE REMEDIAL WORK ELEMENT I, SOILS

July 19, 2001 Revision No. 1

Prepared For:

de maximis, inc. 186 Center Street, Suite 290 Clinton, New Jersey 08809

Prepared By:

CODE ENVIRONMENTAL SERVICES, INC. 400 Middlesex Avenue Carteret, New Jersey 07008

WASTE CHARACTERIZATION, TRANSPORTATION & DISPOSAL PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

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WASTE CHARACTERIZATION, TRANSPORTATION & DISPOSAL PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

APPENDICES

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WASTE CHARACTERIZATION, TRANSPORTATION & DISPOSAL PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

PLAN AUTHORIZATION

This Waste Characterization, Transportation and Disposal Plan (WCTDP) has been reviewed and hereby approved. By their signatures, the following undersigned certify that this WCTDP meets the requirements of the Contract Documents.

Richard J. Abramo, President Code Environmental Services, Inc.		Date
	,	
Thomas M. Tomassetti, Project Manager Code Environmental Services, Inc.		Date
Name, Title Company	·	Date
Name, Title Company		Date

WASTE CHARACTERIZATION, TRANSPORTATION & DISPOSAL PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

INTRODUCTION

The following Waste Characterization, Transportation and Disposal Plan has been developed by Code Environmental Services, Inc. (hereinafter referred to as CODE or the Contractor) in accordance with Specification Section 02325 for the "Remedial Work Element I, Soils" contract to be performed at the Chemsol, Inc. Superfund Site in Piscataway, New Jersey.

In accordance with Specification Section 02325, Item 3.1.A, this Plan describes each of the anticipated wastes to be generated from the work that *require* off-site disposal and the methods proposed to characterize, transport, and dispose of these wastes. The wastes include, but are not limited to, excavated soil, drummed waste, stockpiled soil, drums, personal protective equipment (PPE) and demolition debris, sanitary waste, general refuse, and vegetation from site clearing activities. A local sanitation company will be hired to periodically empty sanitary wastes. General refuse will be disposed through regular municipal trash pick-up. Vegetation from site clearing will be ground for use on-site as mulch.

All waste will be handled in accordance will all applicable local, state and federal requirements. The waste characterization protocol provided herein meets the requirements of the identified transport companies and disposal facilities.

A copy of the approved Waste Characterization, Transportation and Disposal Plan will be maintained on-site by CODE during remedial construction for review by involved personnel.

SECTION 1.0

Waste Characterization Sampling Plan

Waste steams designated for off-site disposal will be characterized in accordance with the requirements of the transportation and disposal facilities and local, state, and federal regulations.

CODE will collect, handle, and analyze waste characterization samples in accordance with Specification Section 02325, Part 3.2.3 and as described herein. CODE's field chemist will be responsible for waste characterization sampling. Samples will be sent to the following laboratory for analysis:

CHEMTECH 205 Campus Plaza Edison, NJ 08837(732) 225-0877

1.1 SAMPLING & ANALYTICAL REQUIREMENTS

1.1.1 Soil Pile

Approximately 1,450 cubic yards of excavated soils are present on site in a mound and consolidated beneath plastic membrane covering. In accordance with Specification Section 02325, Item 3.2.B, the soil in this will be characterized consistent with the protocol presented in the NJDEP Guidance Document for Remediation of Contaminated Soil, as well as PCB and TCLP analyses based on the known on-site contaminants to meet waste disposal facility guidelines.

1.1.2 Drummed Waste

Approximately 368 drums of waste were generated during previous soil boring and well installation at the site. The drummed waste includes soil, drill cuttings, drilling fluid, and personal protection equipment. The drums will be separated and grouped based on contents (drill cuttings, PPE, debris, etc.) and where the contents came from on the site. For example, drums containing drill cuttings generated from the area where the most elevated TVO concentrations are present, as shown on the Drawings, will be grouped together.

CODE will prepare and submit one (1) drum composite sample from 10% of the drums in each group for waste characterization (*TCLP analysis*) based on the known site contaminants (i.e., lead, and VOCs) and PCB analysis. The field chemist will access each drum to collect a sample after decanting any standing water from the top of drum. A composite sample will be will be prepared and shipped to the designated laboratory for the required analyses.

Based on analytical results, CODE anticipates that it will be able to consolidate the drummed material and mix it with the soils for off-site disposal. Emptied drums will be decontaminated (power washed) and sent off-site for disposal as scrap. If the drummed material can not be mixed with excavated soils, drums will be staged separately, over-packed (if needed), and disposed off-site at an approved disposal facility.

1.1.3 Excavated Soils

Analytical results provided with the Project Specifications, including TCLP, analysis, from samples of this soil indicate that the material is classified as **non-hazardous**, with exceptions of a lead concentration above TCLP limit at Test Pit 7, six locations where soils contain PCB concentrations greater than 50 ppm, and the 6-foot excavations areas (SB-74 and S-76).

In locations where soils contain concentrations of PCBs greater than 50 ppm, the areas will be excavated to a limit corresponding to a volume equal to a 20 CY and placed into a roll-off container. The soil in the container will be characterized consistent with the protocol presented in 40CFR761.265. The PCB waste will be sampled using a core sampler to collect a minimum of one core sample through the entire depth of the waste at the center of the container. A minimum of 50 cm of waste is then collected for analysis. If more than one core sample is collected, the samples will be mixed into a composite sample and a subsample taken containing a minimum of 50 cm of waste. If the results are below 50 ppm, then the material in the rolloff container will be transported off-site to an approved hazardous waste or TSCA waste disposal facility. If the results indicate concentrations greater than 50 ppm, additional 20 CY volumes of soil from the area surrounding the sampling location will be excavated, loaded onto rolloff container, and sampled as described above, until results are produced which indicate that the PCB concentrations are below 50 ppm.

Excavated soils will be disposed at one of the facilities identified in Section 2.3 of this Plan in accordance with its hazardous characteristics. Additional characterization of this waste stream will be conducted by the field chemist as required to meet disposal facility requirements.

Free liquids from waste material will be removed and/or stabilized as necessary to meet the requirements of the transportation and disposal facilities and in accordance with local, state, and federal regulations. (See Appendix C - Section 4).

1.1.4 Demolition Debris

Demolition debris generated from this Work will include miscellaneous debris associated with the dismantling of piping associated with recovery Well C-1 and concrete rubble from the concrete pads and foundations within the limits of the excavation. Debris that has been in contact with the soil (e.g., concrete pads, foundations, buried piping) will be power washed. Power washing will be performed on the decontamination pad or within an area yet to be excavated. Concrete debris will be transported to the recycling facility identified in Section 2.3 of this Plan. The remaining demolition debris (e.g, piping) will be disposed off-site at a non-hazardous disposal facility (see Section 2.3).

Waste characterization sampling and analysis is not required for demolition debris.

1.1.5 Tanker Truck

If the tanker is it not empty, the field chemist will collect one sample for waste characterization (TCLP) analysis. Once classified, this material will be removed and disposed per Section 2.0 at an approved off-

site facility. The tanker truck will be power washed prior to off-site disposal at the metals recycling facility identified in Section 2.3 of this Plan.

1.1.6 Personal Protective Equipment (PPE)

PPE used during activities involving non-hazardous soils/wastes will be disposed at a non-hazardous disposal facility. PPE used during activities involving hazardous soils/wastes will be disposed at an approved hazardous disposal facility.

1.2 SAMPLE IDENTIFICATION AND LABELING

The field chemist will record the location and description of all waste characterization sampling activities on the Sample Collection Log provided in Appendix 1. In every case, a unique sample tag will be attached to the sample. Included on the tag will be the sample identification number; date, time, and location of the sample; designation of the sample as a grab or composite; the type of sample for preservation; remarks; and the signature of the sampler.

1.2.1 Sample Identification Number

All samples will be assigned a unique site-specific sample number in order to identify the type and location of the sample. The site-specific sample identification number will consist of the following three parts:

- 1. **Project Identification Code.** Typically, a three-letter designation will be used to identify the site where the sample was collected. The project identification code for the Chemsol, Inc. Superfund Site Remedial Work Element I, Soils CSI.
- 2. **Sample Matrix.** Each sample will be identified by an alpha-code corresponding to the sample matrix (or sample type). The sample matrix codes to be used by CODE the Waste Characterization Samples is WCX.
- 3. **Sample Number Identification.** All samples will have a four digit number as the last component of the sample number system. The sampling events will start with 0001 and progress upward (e.g., CSI-WCX-0001 is the first Waste Characterization sample collected).

1.2.2 Sample Label

Each sample collected will be labeled. Each label will be affixed to the sample bottle and will include the following information:

- · Project name;
- · Sample identification number;
- · Date and time sample was collected;
- · Analyses to be performed;
- Preservatives (if any); and
- · Name or initials of the person who collected the sample.

1.2.3 Sample Collection Log

Each sample collected will be recorded on the Sample Collection Log (see Appendix 1). The sample identification number and all of the information on the sample label, along with any measurements or field observations, will be included in the logbook.

1.3 SAMPLE COLLECTION PROCEDURES & EQUIPMENT

Waste characterization sampling will be conducted in Level C PPE. Procedures and equipment for sample collection follow.

1.3.1 Drummed Waste Samples

One (1) drum composite sample will be prepared from a minimum of 10% of the drums in each group for waste characterization analyses (TCLP). The field chemist will decant any standing water from the top of each drum and access it utilizing the following procedures (as appropriate to actual site conditions) to collect a sample.

1.3.1.1 Health & Safety Considerations

The health and safety requirements for this sampling program will be as stated in the HASP. At a minimum, Level C PPE will be used during sample collection.

Sampling technicians will be accompanied by or be in full view of an observer while performing activities. This observer will aid the technician if a dangerous situation is imminent.

When sampling, drums will be positioned so that the bung, if present, is up. A drum with the bung on the end will be positioned upright; a drum with the bung on the side will be laid on its side, with the bung up. The contents of the drum will be allowed to settle for five minutes.

Due to the potential for the release of pressurized gases and/or liquids when opening drums, strict safety precautions will be observed. A bulging drum indicates that it is under high pressure and should not be sampled until the pressure can be safely relieved. The pressure in a drum is to be relieved by slowly opening the bung on the top. The bung is opened only one quarter turn at a time until the pressure in the drum begins to be released. The bung is not moved again until pressure in the drum is released as evidenced by the hissing noise stopping.

Non-sparking tools will be used to open drums.

1.3.1.2 Drum Sampling

The sampling procedures highlighted in the following paragraphs take into consideration that the drummed materials to be sampled are of various form and consistency. CODE's proposed sampling procedures consider the presence of liquids, sludges, semi-solids, dry solids, and layered mixtures of the same and inert residue. The exact sampling methodologies used on-site will be dictated by the specific form and type of waste present in the testing as well as to the requirements for testing. Samples

collected will be representative of the containerized material and will account for any wastes having various liquid/liquid, liquid/solid, or solid/solid phases. Drums will be sampled in such a manner as to obtain a representative sample of the material contained in accordance with the protocol specified in U.S. EPA SW846 3rd Edition.

Drummed waste characterization samples will be collected CODE's field chemist as follows.

Sampling Liquids In Drums - Liquids will be sampled using a clean dedicated glass thief tube.

Sampling Sludges & Semi-Solid Materials In Drums - Sludges in drums or other containers can range in consistency from slurries to near solid materials. The sampling device employed will be dependent upon the consistency of the sludge material. Loose slurry material will be sampled using a glass thief. A material which will not enter the thief will need to be sampled by other means. If the sludge contains a large amount of coarse or compacted material it will be sampled with a sampler trier. Sludges in open drums or containers containing a very low degree of moisture will be sampled as a solid.

<u>Sampling Solids In Drums</u> - Solid material contained in drums or other containers will be sampled with a trier or scoop.

From the sampling device, the sample will be transferred to an appropriate sample container to await compositing.

1.3.1.3 Sample Compositing

A sample compositing strategy will be utilized as part of this drummed waste sampling program in order to control analytical costs. One (1) drum composite sample will be prepared from 10% of the drums in each group of similarly grouped materials (see Section 2.1.1).

1.3.2 Soil Pile and Other Solid Waste Samples

Equipment required for the collection of solid samples consists of:

- Disposable, powder-free, Nitrile gloves,
- Appropriate sampling device,
- Appropriate sample containers, labels, and seals,
- > Chain-of-custody records, and
- Appropriate personnel safety equipment.

Solid samples will be collected as follows.

- 1. Choose appropriate sampling points.
- 2. Record area to be sampled in Field Sampling Notebook for later reference.
- 3. Don a new pair of disposable latex surgical gloves.

- 4. Collect sample using a field-decontaminated steel hand auger to a depth of six (6) inches or to depths directed by the Trust's Representative.
- 5a. Transfer soil samples that will be analyzed for VOCs directly from the auger to approved containers.
- 5b. Homogenize soil samples for all other analyses in a stainless steel bowl prior to placement in approved sample containers.
- 6. Cap the sample container, attach the label and custody seal, record all pertinent data in the field log book, and complete the sampling analysis request form and chain-of-custody record before taking the next sample. NOTE: Due to the potential for cross-contamination DO NOT place custody seals and tape on the cap of VOC samples.
- 7. Preserve and/or place on ice if required.
- 8. Deliver sample to the off-site laboratory for analysis within 24 hours of the day of collection.

NOTE: Decontaminate the sampling device between sampling events.

1.4 SAMPLE HANDLING

Protocol for container preparation and cleaning; containerization; preservation; handling; and sampling equipment decontamination is presented in the following subsections. (Refer to Table - A)

1.4.1 Container Preparation and Cleaning Procedures

All sample bottles and containers will be supplied and precleaned by the Laboratory in accordance with USEPA requirements. Samples bottles will be shipped from the Laboratory to the field under custody procedures.

1.4.2 Containerization

Individual samples will be transferred from the field collection equipment/containers to the appropriate precleaned bottles and containers for shipment to the laboratory.

Filled sample containers will be marked with a permanent marker to indicate the level of material in the container. After collection, all sample containers will be placed in shipping containers.

1.4.3 Preservation & Holding Times

Samples will be cooled to 4°C. Holding times for waste characterization samples will be per Analytical Methods

1.4.4 Sample Handling

The collected sample and its container represent an avenue of personnel and environmental exposure. Precautions will be taken to ensure that all the samples removed from the site are within the sample container and that no residue is on the outside of the container. (Refer to Table - A)

The procedure for handling samples will be as follows.

- 1. Identify and document sample collection points.
- 2. Complete logbook entries, sample labels, and any field record sheets with sample identification point, date, time, and names or initials of all persons handling the sample in the field.
- 3. Place identification labels on sample containers.
- 4. Avoid contact with the lid of the jar when filling.
- 5. Provide sample preservation when required.
- 6. Secure the lid on each sample.
- 7. Carry sealed sample containers to the packaging area.
- 8. Clean the outer surface of glass jars with soap and water, paper towels, and/or isopropanol wipes.

 NOTE: Care must be taken not to remove or impact the ability of the label to remain affixed to the sample container.
- 9. Securely tape the lid to the sample container; then date and initial the tape.
- 10. Carefully pack samples for off-site analyses in coolers/packages. Custody-seal the shipping package.
- 11. Ship to the laboratory as appropriate.

1.4.5 Chain-of-Custody Procedures

After collection and identification, the samples will be maintained under the chain-of-custody procedures outlined below. Each person involved with the samples must understand these procedures. Samples in one's possession must be traceable from the time of collection through ultimate disposition. To maintain and document sample possession, these chain-of-custody procedures must be followed.

1.4.5.1 Definition

A sample is under custody if:

- It is in your actual possession;
- It is in your view after being in your physical possession;
- It was in your physical possession and you locked it up to prevent further tampering; or
- · It is in your designated and secure area.

TABLE A

Analytical Methods And Collection Requirements Soil Samples

Parameter	Methods	Holding Times	Container Type	Preservatives	
Full TCLP:					
TCLP VOC	8260B	14 days from sampling	(1) 4oz glass	Cool to≤ 4deg C	
TCLP Extraction	1311	7 days for extraction	(1) 8oz glass	Cool to≤ 4deg C	
TCLP BNA	8270C	14 days after extraction	(1) 8oz glass	Cool to≤ 4deg C	
TCLP Metals	6010B/7471A	6 months - Hg 28 days	(1) 4oz glass	Cool to≤ 4deg C	
TCLP Pesticide	8081A	14 days after extraction	(1) 8oz glass	Cool to≤ 4deg C	
TCLP Herbicide	8151A	14 days after extraction	(1) 8oz glass	Cool to≤ 4deg C	
PP + 40:					
PP VOC	8260B	14 days from sampling	(1) 4oz glass	Cool to≤ 4deg €	
PP SVOC	8270	14 days from sampling /	(1) 8oz glass	Cool to≤ 4deg C	
PP Metals	6010B/7471A	6 months -Hg28 days	(1) 4oz glass	Cool to≤ 4deg C	
Pesticides	8081A	14 days from sampling /	(1) 8oz glass	Cool to≤4deg C	
РСВ	8082	14 days from sampling /	(1) 8oz glass	Cool to≤ 4 deg €	
Cyanide	9010B/9213/9013	14 days from sampling	(1) 4oz glass	Cool to≤ 4deg C	
Phenolics	9065/9066/9067	28 days from sampling	(1) 4oz glass	Cool to≤ 4deg C	
Total Pb, V, Ba	6010B	6 months	(1) 4oz glass	Cool to≤ Adeg C	
RCRA Characteriz	ation:				
Ignitability	EPA 1010	14 days from sampling	(1) 4oz glass	Cool to≤ 4deg C	
Corrosivity	9040B/1110	14 days from sampling	(1) 4oz glass	Cool to≤4deg C	
Reactive Sulfide	9021	14 days from sampling	(1) 4oz glass	Cool to≤4deg C	
Reactive Cyanide	9021	14 days from sampling	(1) 4oz glass	Cool to≤ 4deg C	
ТРН	8015B	14 days from sampling /	(1) 4oz glass	Cool to≤ 4 deg C	
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			A STATE OF THE STA	
VOC	8260B	14 days from sampling	(2) 2oz glass	Cool to≤4deg C	
Hex Chrom	7196A	7 days from sampling	(1) 4oz glass	Cool to≤ 4deg C	
				T	
Sulfate	9035/9036	14 days from sampling	(1) 2oz glass	Cool to≤4deg C	

1.4.5.2 Responsibilities

The field chemist/Site QC Officer will be responsible for monitoring all chain-of-custody activities and for collecting legally admissible copies of chain-of-custody documentation for the permanent project file. The field chemist/Site QC Officer will:

- Conduct an initial review of sample labels or tags, closure tapes, and chain-of-custody record and sample split forms provided by the laboratory. The field chemist/Site QC Officer will document this review for the project file.
- Review methodologies to be used for accomplishing chain-of-custody and ensure all chain-of-custody forms and record documents are properly completed.
 - Monitor implementation of chain-of-custody procedures.

1.4.5.3 Preparation

The laboratory, with guidance or direction from the field chemist/Site QC Officer, will prepare labels or tags for pre-cleaned sample containers (i.e., jars, bottles, vials) prior to the transfer of these containers to the field. Labels will be made of materials which will adhere to glass containers even when wet. Tags will be designed to attach to vials or any other small container to which a label cannot easily be attached. Labels and tags (hereinafter referred to as labels) should provide space for the following information:

- · Collector's name or initials,
- · Sample number,
- · Sampling location,
- · Sampling depth (if applicable),
- · Date of sampling, and
- · Time of sampling.

Labels also should provide space for remarks regarding sample preservation and analyses to be performed, should samples be separated into portions in the field for different chemical analyses. Under certain circumstances, some of the information listed above may be omitted from sample labels for purposes of confidentiality. Omitted information must nevertheless be recorded in field sampler's logbooks.

1.4.5.4 Sample Collection

The field chemist/Site QC Officer will fill out all portions of sample labels when or if possible, prior to the time samples are taken. At the time of sampling, the Field chemist/Site QC Officer will record sample information in the logbooks and on the chain-of-custody form, noting on each any difficulties encountered during sampling. All label, logbook, and chain-of-custody form entries will be made in waterproof ink. The sample information recorded in the logbooks should be at least as detailed as that recorded on labels, and should indicate sample matrix (i.e., soil, sediment, water), preservation techniques, and sampling location in sufficient detail to allow resampling at the same location.

After containers are filled, the field chemist/Site QC Officer will place closure tapes over the lids and along the sides of the containers, and will put the filled containers in cartons or ice chests. If required by the Trust's Representative, a 40 ml vial of potable water will be included in the ice chest as a temperature blank. Upon receipt of the samples, a thermometer will be used to take the temperature of the blank to represent sample temperatures. The field chemist/Site QC Officer will maintain custody of all samples until they can be transferred to the off-site laboratory.

Prior to the transfer of samples from the field to the laboratory, the field chemist/Site QC Officer will check samples and forms for correspondence, documenting any discrepancies in the custody logbook. The field chemist/Site QC Officer also will prepare the samples for transport by ensuring that the potential damage to sample containers via leakage or breakage and closure tapes is minimized.

1.4.5.5 Sample Transport

The field chemist/Site QC Officer or other designated individual will arrange transport of the samples to the laboratory following EPA/DOT procedures and regulations as promulgated in the Federal Register. Samples will be packaged in approved shipping containers (coolers) capable of maintaining the 4°C preservation and will be shipped from the site to the laboratory. Samples will be received by the laboratory within 24 hours of collection.

1.4.5.6 Laboratory

A designated laboratory custodian will receive the samples at the laboratory. Both the laboratory custodian and the transporter will sign and date the chain-of-custody forms. It will be the responsibility of the field chemist/Site QC Officer to collect all chain-of-custody forms (or photocopies or microfilms of the forms) retained by transporters for inclusion in the permanent project file. The laboratory will destroy copies of the chain-of-custody forms only with the written permission of the Project Director.

Upon receipt, the laboratory custodian will examine sample containers for breakage and/or broken closure tapes. The custodian will document any findings in a project-specific logbook and on the relevant chain-of-custody forms. The laboratory custodian also will verify that the information on the sample labels matches that on the forms. Again, any discrepancies will be noted on the chain-of-custody form and verbally reported to CODE's field chemist/Site QC Officer as soon as possible within the next 24 hours.

1.4.5.7 Records

Sampling logbooks, the custody logbook, all chain-of-custody records, all sample split receipts, all laboratory project specific logbooks, and any other notes or records prepared by the field custodian, transporters, or laboratory personnel will become part of the project file.

1.4.6 Sample Retainage

The Laboratory will retain the original field samples for a period of 90 days at which time the samples will be properly disposed of in accordance with the applicable regulations or returned to the Trust (upon request) for storage.

1.5 SAMPLING EQUIPMENT DECONTAMINATION

All non-disposable tools which come into contact with the sample material will be decontaminated after each sampling event and before demobilization from the project site. All sampling equipment will be decontaminated in the following manner:

- 1. The exterior of the sampler will be decontaminated using a laboratory detergent wash and potable water rinse between samples.
- 2. 10% nitric acid rinse if sampling for metals.
- 3. Rinse with demonstrated analyte- free water
- 4. Acetone rinse (pesticide grade) if sampling for organics.
- 5. Rinse with demonstrated analyte-free water.
- 6. Air Dry.
- 7. Wrap in foil unless used immediately.

Any major equipment (e.g., backhoes) used in support of sampling efforts will be decontaminated per Section 9.2 of the HASP between sampling events.

Wastewater generated from the Work, including decontamination water and water generated during excavation activities that is not drained back into the excavation, will be contained, stored, and transferred into the existing groundwater treatment system. Wastewater will not be disposed off-site. As described in the Waste Handling Plan, wastewater will be placed in a storage tank to allow sediments to settle. Then, wastewater will be filtered using a 50-micron bag filtration system and transferred to the existing on-site treatment plant. The bag filters and sediments will be disposed off-site with the excavated soils. The maximum flow rate of wastewater to the existing treatment plan will be limited to 10 gallons per minute.

1.6 ANALYTICAL DATA REPORTING

The laboratory will supply a hard copy of the waste characterization analytical results within 14 days of the sample collection date.

SECTION 2.0 Transportation and Disposal Plan

CODE's Transportation and Disposal Plan for addresses:

- · Material handling methods (as they relate to transportation and disposal);
- · Spill contingency methods; and
- · Transportation companies and disposal and recycling facilities.

2.1 MATERIAL HANDLING METHODS

2.1.1 Waste Classification Sampling and Analyses

Waste classification sampling and analyses will be conducted as stated in Section 1.0 of this Plan.

2.1.2 Waste Product Approval

After the status of the material's characteristics has been determined, CODE will complete a material waste profile sheet. This profile sheet is required by all waste disposal facilities and must be completed by the generator along with all available data. This form will be completed by CODE and submitted to the Trust's Representative for approval and signature. The form then will be submitted to the selected disposal facility.

The purpose of the waste profile sheet is to allow the disposal facility to review and evaluate the waste material to be accepted, ensuring its compliance to their operating permits. If the material is acceptable, the facility will issue a product approval code and schedule it for disposal.

2.1.3 Preparation of Shipping Documents

After the disposal facility notifies CODE that it will accept the material, all necessary paperwork required by law to properly transport waste material from the project site to the disposal site will be completed. The Project Manager will be responsible for completing the manifests and obtaining required signatures.

Information to be provided on each manifest includes:

- · Generator's EPA Identification Number.
- · Generator's name, mailing address, and phone number.
- Approved transporter name, EPA Identification Number, and phone number.
- Disposal facility name and address.
- Proper United States Department of Transportation (DOT) shipping name, hazard class, and identification number.
- Total quantity and unit volume.

- Generator's signature, month, date, and year.
- Transporter signature (driver), month, date, and year.

This manifest system allows for complete tracking of the waste material from point of generation to the final disposal facility. Once disposal takes place, copies of the completed manifest documentation will be sent to the appropriate regulatory agency(ies) by the generator and the disposal facility. CODE will coordinate with Trust Representatives to schedule authorization/signing of waste manifests for hazardous wastes.

The return copy, page 3 of most manifest forms, will serve as the generator's receipt that the waste material was accepted and disposed of at the disposal facility. This document will become part of the permanent project file and will be provided to the Trust's Representative.

NOTE: Any non-hazardous materials will be shipped off-site for salvage, reuse, treatment, or disposal under Bills-of Lading. The Bills of Lading will be signed by the Trust's Representative.

2.1.4 Material Load-Out

Transportation will be provided by an approved transporter (see Section 2.3).

The transport permit must be current and will be checked by the Project Manager prior to the vehicle's arrival on site. The driver of the transport vehicle will not be permitted to leave the vehicle at any time. The transporter will be required to provide the following information prior to entering the site:

- Vehicle lightweight at a certified weight scale (this information can be checked upon arrival at site,
- · Current waste hauling permits,
- Vehicle safety inspection provided by the Site Safety and Health Officer, and
- · Current DOT physical card and documented training.

Waste material will loaded onto NJDOT-approved transport vehicles in the Exclusion Zone. Typical vehicles used to transport solid waste are water tight, aluminum or steel body dump trailers. Prior to loading, vehicle's wheels will be draped with polyethylene to prevent contamination. A designated contractor employee will visually monitor the loading process and inform the operator when the load is full. NOTE: Drivers will be required to wear Level D protection and must remain in their cabs with the windows closed during loading operations (the area inside the cab is considered a clean environment).

Once the transport vehicle has been loaded it will be directed to the equipment decontamination pad. CODE will pressure wash the vehicle's wheels and undercarriage to remove any soil that may have accumulated on the truck body. At this point the load will be tarped (if using dump trailers) and secured for transport. The SHSO will inspect all vehicles to ensure they are free from contamination prior to their release from the project site.

The transport driver then will proceed to CODE's office trailer and sign all pertinent paperwork relative to loading.

Outgoing disposal trucks will be weighed on the temporary scale¹ (a Gerhart 7-foot Axle Weigher with a digital read-out and printout, or approved equal). If the loaded weight is in excess of the legal limit allowed for material transport, the load will be reduced and the truck will be re-weighed. Loaded weights will be checked against disposal facility invoices to insure no discrepancies exist. CODE will maintain a daily log of each truck's weight and all waste shipped off-site (see Appendix 1). The log will include date, waste characterization, transporter disposal facility identification and location, manifest number, vehicle number, driver, and approximate volume and/or weight of waste. Logs for the previous week's activities will be submitted at the weekly progress meetings.

2.2 SPILL CONTINGENCY METHODS

The Project Health and Safety Manager and/or SHSO will be required to verify that all transportation vehicles used in support of this contract are equipped with appropriate spill response equipment; and that the drivers have received proper spill response training and maintain all required federal and state licenses and certifications. In addition, CODE will require any potential off-site transporter to submit a copy of its Spill Response Plan to the Project Health and Safety Manager for review prior to arrival at the Project Site.

In the event of a spill at the site, the contingency methods provided in HASP, Appendix 6 will be followed. Generally, all visually detectable spills, leaks, or releases of fuel oil will be collected and cleaned up using absorbent pads, booms, sandbags, sand, and/or other inert materials as practicable using the response procedures outlined below. In the event of a spill off-site, the Remedial Action Contingency Plan (included in the RAWP) would be followed.

Spill Type	Response				
Waste Oil on Ground	Contain spill and excavate visually contaminated soil. Containerize, sample for classification purposes, and dispose off-site.				
Building/Paved Surfaces	Contain spill. Power wash contaminated area. Collect and containerize resultant washwater. Sample for classification purposes. Dispose off-site.				
Vehicle	Power wash in CRZ. Collect, handle, and dispose of decon fluids.				
Waste from Truck Spilled on Roadway	Contain spilled material. Collect, containerize, and remove spilled material. Sample for waste classification purposes. Dispose off-site.				

2.3 TRANSPORTERS AND DISPOSAL FACILITIES

Off-site disposal facilities to be utilized in support of this contract are identified below. Transportation will be provided by the selected facility(ies).

Non-Hazardous Waste Materials					
Transport/Disposal Facility Name and Address	Contact Name/Number	Waste Material			
LINDEN LANDFILL/BAYSHORE RECYCLING Perth Amboy/Keasby, NJ	Al Ludwig (732) 293-0700	Non-hazardous soil for landfill cover, non-hazardous concrete recycling			
OENJ Bayonne, NJ	Al Ludwig (732) 293-0700	Non-hazardous soil for reuse			
NAPORANO IRON & METAL Newark, NJ	Tom Schadd (973) 344-4570	Steel / Metal Recycling			
Hazardous Waste Materials					
Facility Name/Address		Waste Material			
CWM CHEMICAL SERVICES, L.L.C. 150 Balmer Road Model City, NY 14107	Pat Ludwig (716) 754-7231	TSCA Soils/ RCRA/PCB VOCs			
S&W WASTE, INC. South Kearny, NJ 07032	Steve Kisco (973) 578-4800, ext. 253	RCRA (Lead)			
US LIQUIDS (Alternate) Detroit, Michigan 48211	Donna M. Sommer (313) 923-0080	VOCs			

Permit information, copies of Notice of Violation, and other relevant information on the above-named facilities is provided in Appendix 3.

APPENDIX 1 Sample Report Forms

SAMPLE COLLECTION LOC

	•		SAIVIPLE CC	LLECTION	LUG		
Project Name	e: Remedial W	ork Element I, S	Soils	Co	ontract No.:	·	
Site Name:	Chemsol, In	c. Superfund Sit	<u>e</u>	Co	ODE Job No.:		
Sample No.	Date	Time	Location	Soil Type	Sample Type	Collected By	Observations
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DATE:_				Page	e of		
Project N	Name: Remed	dial Work Ele	ment I, Soils		Contract No.:		
Site Nam	ne: <u>Chem</u>	sol, Inc. Super	rfund Site		CODE Job No.:		
Vehicle	Truck	Weight	Waste	Transporter	Disposal	Manifest	Driver
ID No.	Incoming	Outgoing	Characterization	Name	Facility Name & Location	Number	Name
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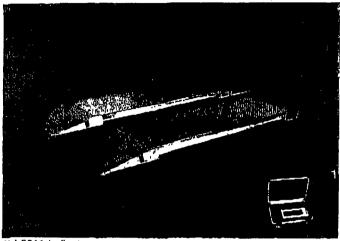
APPENDIX 2 Product Information for Temporary Scale





PRODUCT INFORMATION

PORTABLE SCALES with Ramp-Ends



1) L5011 Indicator

More than 25 years of experience in designing and manufacturing heavy-duty scale systems is built into every LODEC axle scale. High strength materials and rugged construction ensure that every LODEC scale performs accurately and dependably with little maintenance required. The technology utilized is tested, proven and has evolved directly from our work in more than two decades of providing on-board weighing systems and axle scales for the transportation industry, law enforcement agencies and general industries around the world.

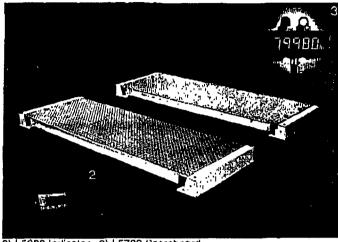
Portable Ramp-end Scales

LODEC Portable Ramp-end Axle Scales are designed specifically for portability. They provide you with a quick and easy method of checkweighing to ensure your trucks are loaded to the legal limit for maximum efficiency without risk of overloading. They are ideal for use at remote locations where it is necessary to monitor truck weights at the loading point. Set up is quick and easy, just place the scales on flat solid ground, connect the power and signal cables and you are ready to weigh. Special trailers are available with electric winches to allow one man operation for set up and relocation.

Axle Weight & Total Gross Weight Calculation

LODEC Axic Scales provide axic group weight as well as total gross vehicle weight to ensure proper load distribution over each axle or axle group.

PERMANENT SCALES for Shallow Pit Installation



2) L5000 Indicator 3) L5700 Scorehoard

Permanent Scales - Shallow Pit Installation

LODEC Permanent Box-end Axle Scales are designed for shallow pit installation and are ideal for use at truck terminals, distribution centers and warehouse operations. Say goodbye to deep pits, precision leveling, heavy construction equipment and high costs associated with conventional truck scale systems. Our exclusive construction kit contains prefabricated forms, rebar, galvanized coping and complete instructions to ensure a quick, accurate and low cost installation without prior scalo installation experience.

Low Maintenance & Built To Last

LODEC scales are fully electronic; there are no moving parts to wear out or adjust and no troublesome hydraulic components to maintain. Weight is measured using our precision machined, high strength load cells located within the platforms. They are environmentally sealed and virtually indestructible, ensuring years of trouble free operation. The platforms are constructed of high strength aluminum alloy or heavy-duty structural steel to stand up to heavy, repeated use.

Standard Features Include:

- Electronic load cells no moving parts to wear out
- Heavy-duty aluminum or steel construction
- · Totally sealed for all weather environment
- Quick set-up & easy operation

Circulated Indiamentation

GERHART SCALE CORPORATION

603 Washington Ava. South Amboy, New Jersey 08879 732-525-1000 Fax: 732-525-9610 E-MAIL - gsanj@gorhart.com sitech@sitechnologies.com

Canadian Operations #106 - 1765 Springfield Road Kelowna, Brilish Columbia V1Y SVS Can. Toll Free: (800) 989-1499 Tel: (750) 860-8450 Fax* (250) 762-9811 www.sitechnotogles.com

Satellite Offices Arlington, TX Eugene, OR Indianapolis, IN Los Angoles, CA Philadelphia, PA

LODEC™ INDUSTRIAL AXLE SCALES

Portable Ramp-End Scales

Model

L3030

L3040

Construction:

Aluminum

Aluminum

Capacity:

60,000 lbs.

100,000 lbs.

Overall Weight:

800 lbs.

1,000 lbs.

Weighbridge Length:

7 ft.

7 ft,

Overall Length:

118.2 inches

118.2 inches

Overall Width:

32 inches

32 inches

Height:

5.5 inches

5.5 inches

Axle Accommodation:

Single

Tandem

X

Permanent Box-End Scales (shallow pit installation)

Model	L3031	L3041	L3261	L3281
Construction:	Aluminum	Aluminum	Steel	Steel
Capacity:	60,000 lbs.	60,000 lbs.	80,000 lbs.	80,000 lbs.
Overall Weight:	870 lbs.	1,070 lbs	3,200 lbs.	3,800 lbs.
Weighbridge Lenyth:	7 ft.	7 ft.	12 ft.	14 fL.
Overall Length:	91.2 inches	91,2 inches	151.1 inches	175.5 inches
Overall Width:	31 inches	31 inches	31 inches	31 inches
Height:	5.7 inches	5.7 inches	5.8 inches	5.8 inches
Axle Accommodation:			•	
Single	×	x	x	x
Tandein	×	x	x	x
Triple			x	x
Spread			×	x
Quad				x

Options:

Detachable Ramp Set (For L3031/L3041/L3261/L3281)

Pit Construction Kit

Surge Voltago Protection Kit

L5700 Scoreboard

L5011 Indicator

L5000 Indicator

Fς or

Cē

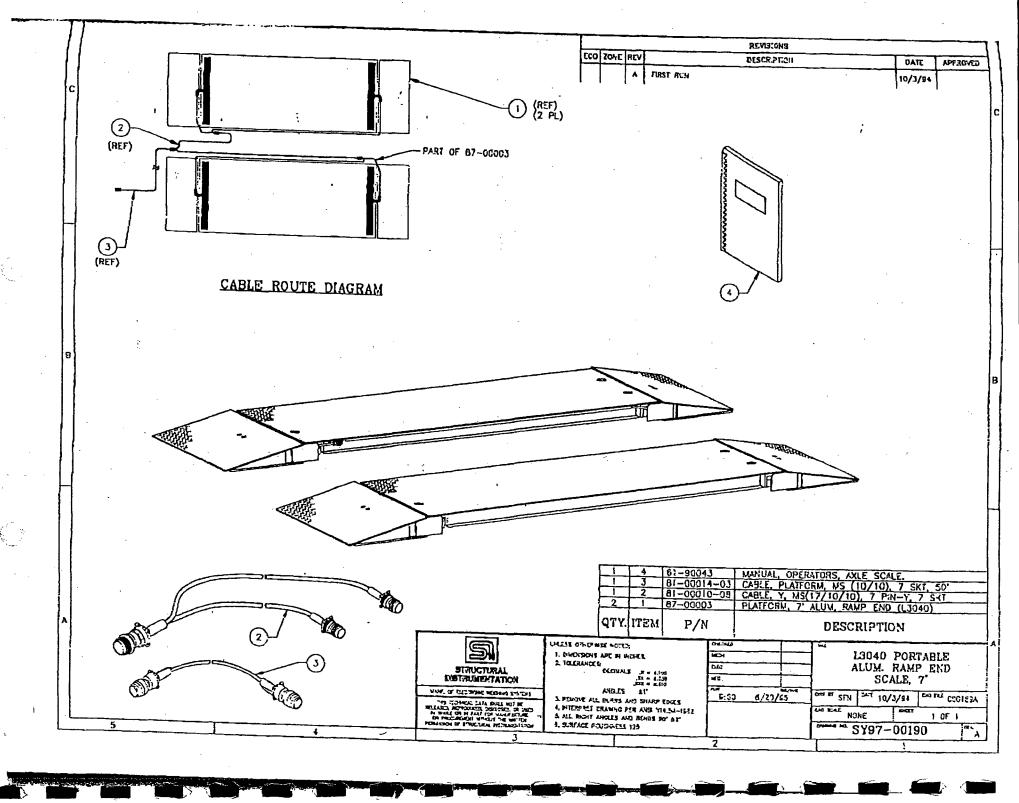
GERHART SCALE CORPORATION

603 Washington Ave. SC

South Amboy, Now Jersey 08879 732-525-1000 Fax: 732-525-9610

E-MAIL - gscnj@gerhart.com

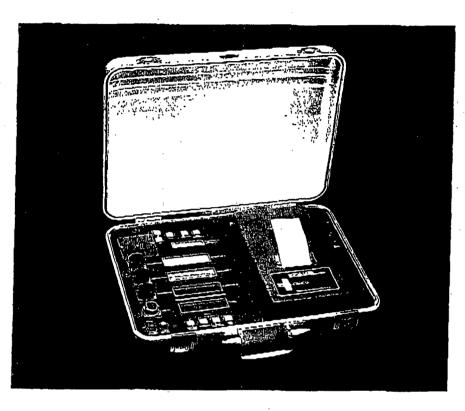
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L5320/L5321 PORTABLE PRINTING INDICATOR



PRODUCT INFORMATION



- NTEP Approved
- Easily transportable in shielded aluminum case
- Separate displays for:
 - · Channel weights
 - · Total weight
 - Operational messages
- Interfaces with an external printer or scoreboard
- Automatic zero tracking
- Motion detection ensures stable weight reagin-
- 1. 2, or 3 channel operation (L5320 only)
- Overrange detection
- Óver/under certified temperature indication
- Stores over 200 vehicle transactions

603 Washington Ave. South Amboy, New Jorsey 08879 732-525-1000 Fax: 732-525-9610 E-MAIL - gscnj@gerhart.com Ca

7 (604) 860-8450 • Fak (604) 762-9811

L5320/L5321 Specifications

Case

Size:

18" (457 mm) wide, 13" (330 mm) deep, 6" (152 mm) high

Material:

Aluminum (RFI shielded).

Weight:

12 pounds (5.5 kgs)

Electrical

Power:

9 Vdc to 16 Vdc @ 1.5A average, 4A peak

Fuse Rating:

3 Amp, 250 V. AGC/3AG, Slow Blow

Battery Back-up:

Continuous clock, internal memory

Displays

Channel Displays: Total Display:

LCD, 0.7" (18 mm) digit height LCD, 0.7" (18 mm) digit height

Message Display:

LCD, 2 lines of 16 dot-matrix characters

Backlighting of LCDs:

Blue/Green electroluminescent

Channels

Measurement Channels:

Quantity: 3 (L5320) or 1 (L5321)

Load cell response compatibility: Excitation drive capability (Total):

0.5 mV/V to 2.0 mV/V Twelve 350 Ohm load cells

Channel Calibration:

2 to 5 point calibration per channel

All digitally controlled calibration functions

Communications

Serial Output:

External Printer: Tape or Ticket (RS232C)

Scoreboard (RS422A)

Computer Output:

Transmits all stored vehicle transactions (RS232C continuous)

Printer

Printing Method:

Impact dot matrix, two-color printing

Number of Print Columns:

22 9 x 9

Font Size:

0.095" High, 0.067" Wide

Character Size:

Tape Width:

2.25" (57 mm)

Standard Features

Automatic Zero Tracking

Time and Date Motion Detection

1,2, or 3 Channel operation (L5320 only)

Scalable calibration switches

Low voltage and over voltage display lockout

Acceptance of both directions of travel onto scale platforms

Overrange detection

Over/under certified temperature indication

Stores over 200 vehicle transactions

Selectable 10, 20, 50, or 100 lb/kg graduation size

Compliance

Complies with National Bureau of Standards Hb44, 1993 NTEP and O.I.M.L. for Class IIII weighing devices **APPENDIX 3**Transportation Company/Disposal Facility Information

EAG

Environmental Alliance Group, Inc.

9400 Ventnor Avenue Margate, NJ 08402 United States of America 609-823-0662 Phone 609-823-0652 Fax

Code Environmental 400 Middlesex Avenue Carteret, NJ 07008 July 5, 2001

Attention: TomTomassetti

Dear Tom,

As per our conversation, EAG along with Clean Earth, Inc., will accept soil from the CHEMSOL project through Code Environmental and Bayshore Recycling.

This acceptance is conditional upon analytical results meeting the requirements of our Linden Landfill Facility. In addition, a conditional approval will be issued by EAG/CEI provided all payment and price terms are agreed to by both parties.

Jim Saprord



August 29, 2001

Mr. Marc Cruz Code Environmental Services, Inc. 400 Middlesex Avenue Carteret, NJ 07008

RE: Waste Disposal Acceptance Letter
Chemsol Superfund Site
Piscataway, NJ

Dear Mr. Cruz:

After review of the analysis results for the soil samples from the Remedial Investigation conducted by the USEPA (CDM Federal Programs Corp., October 1996) summarized in Table 3-2 and on sheet 3, indicate the soil to be RCRA lead contaminated. Clean Earth of North Jersey (formerly S & W Waste, Inc.) can accept RCRA hazardous lead, non TSCA and without UHC's contaminated soil from the referenced construction project, provided that there will be a current (within one year) analysis' and after the inbound QA/QC test, the waste meets the constraints of S&W Waste, Inc. permits.

If you have any further questions, please feel free to contact me.

Sincerely,

Stephen M. Kisko

Clean Earth of North Jersey

BAYSHORE RECYCLING CORPORATION

Construction Recycling Technologies
Proud to be a WBE and Equal Opportunity employer
1050 State Street, Box #15
Perth Amboy, NJ 08861-2050
732-293-0700Fax 732-293-0587

July 5, 2001

Mr. Rich Abramo Code Environmental 400 Middlesex Avenue Carteret, NJ 07008

Re:

Chemsol, Inc. End of Fleming Street

Piscataway, NJ

Dear Mr. Abramo:

The oversize material on the above referenced project is approved for disposal/recycling pending additional analyticals. If you have any further questions, please contact me at the above address and phone number or via my cellular phone (732) 513-1576 or my beeper (732) 792-8956.

Sincerely,

Al Ludwig Sales Director

Enclosures

OENJ Cherokee Corporation

61 North Hook Road Bayonne, N.J. 07002 (201) 377-9375 (201) 823-0670 (Fax)

July 5, 2001

Chemsol, Inc.
End of Fleming Street
Piscataway, NJ
VIA FACSIMILE 732-293-0587

Re: Corner of New Brunswick Avenue & Tyler St. Piscatawy, NJ Project – 30,000 cu yards

Dear Al:

After preliminary examination of the laboratory data supplied to us from the lab on the material generated from the above referenced project, we believe the material will be acceptable for disposal at the OENJ Cherokee facility.

As we discussed, further sampling and analytical are required according to our Protocol sampling, the material must meet the criteria of our protocol prior to our acceptance.

Sincerely,

Mac

Rose Siryani \

Marketing Associate



WASTE MANAGEMENT, INC.

CWM Chemical Services, L.L.C. 1550 Balmer Rd. P.O. Box 200 Model City, N.Y. 14107 716/754-8231

August 29, 2001

Code Environmental Services 400 Middlesex Avenue Carteret, NJ 07008-3449 Atm: Marc Cruz

Re: Chemsol Inc Superfund Site

Piscataway, NJ

Dear Mr. Cruz,

Please allow this letter to act as a commitment from CWM Chemical Services, LLC to dispose of the PCB and TCE/PCE contaminated soil meeting treatment standards for direct landfill at our RCRA/TSCA facility located in Model City, NY for the above-mentioned project.

We furthermore certify that CWM Chemical Services, LLC currently has the necessary local, state and federal permits to treat and dispose of this waste as deemed by 6NYCRR364, 6NYCRR372 and 6NYCRR373 and we are in compliance with the aforementioned regulations.

Please note that as part of the actual approval for disposal of any waste we must have a completed waste profile form, sample and sample certification form or signed sample analytical, which is subject to review and approval by our Environmental Management Department, the New York State Department of Environmental Conservation and other applicable agencies.

If you have any questions related to this matter please do not hesitate to contact me at (716) 754-0451.

Sincerely,

CWM Chemical Services, LLC Model City Division

Patricia Ludwig

Customer Service Representative

) udwis

(716) 754-0451



WASTE MANAGEMENT, INC.

CWM Chemical Services, L. L.C. 1550 Balmer Rd. P.O. Box 200 Model City, N.Y. 1 4 107 716/754-8231

February 6, 2001

RE: Status of RMU-1 Part 373 Permit #9-2934-00022/00036-0

The RMU-1 Part 373 Permit for CWM's Model City facility has an expiration clate of November 16, 1998. A renewal application was submitted to the New York State Department of Environmental Conservation (NYSDEC) on May 14, 1998 in accordance with state regulations 6 NYCRR Part 621.13. As precondition (i) of this regulation states, as long as the permittee has submitted a timely and sufficient application for renewal, the existing permit does not expire until the Department has made a final decision on the renewal application.

Rebecca P. Zayatz
Environmental Manager
Model City Facility

May 14, 1998



Waste Management, Inc.

CWM Chemical Services, Inc. 1550 Balmer Rd. P.O. Box 200 Model City, N. Y. 14107 Phone 716/754-8231

Mr. Jeffrey Dietz
Permits Administration
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203

Re: RMU-1 Part 373 Permit Renewal Application

Dear Mr. Dietz:

Attached please find the Renewal Application for the Residuals Management Unit No. 1 (RMU-1) Part 373 Permit No. 9-2934-00022/00036, which expires on November 16, 1998, for your review and approval. In accordance with our recent discussions with the Department, this application reflects the currently approved permit documents with the addition of the proposed RMU-1 airspace enhancement project, which was separately submitted on August 7, 1997, and is still under NYSDEC review. As indicated in the attached document, the Closure and Post-Closure Plans associated with this permit renewal application are not included in Section I, but were separately submitted on April 30, 1997, and are still under NYSDEC review.

If you have any questions, contact either myself at (716) 754-0279 or John B. Hino at (716) 754-0278.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am a ware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Sincerely,

CWM CHEMICAL SERVICES, LLC

Relucci P. Zupt

Rebecca Park Zayatz

Environmental Engineering Manager

Model City Facility

JBH/RPZ/jbh Attachment 5-20-6 (10/90)--- 25c

DEC PERMIT NUMBER

9-2934-00022/00036-0

FACILITY/PROGRAM NUMBERG) NYD 049836679

1-LS + RMU-1 NY-0072061



PERMIT Under the Environmental Conservation Law (ECL)

EFFECTIVE DATE 11/16/93 EXPIRATION DATE: All Permits 5 years after issuance

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TYPE OF PERMIT	T (Check All Applicable Bose Renewal	al Modification	Permit to Co	estruct	Permit to Operate	·
Article 15, Title 5: Protection of Water Article 15, Title 15:	X	Article 17, Titles SPDES Article 19:		X Article Hazar Article	27. Title 9; 6N' dous Waste Man	agement
Water Supply Article 15, Title 15:		Air Pollution Con Article 23, Title Mined Land Rec	27:	Article	al Erosion Manag : 36: plain Managemer	
Water Transport Article 15, Title 15: Long Island Wells Article 15, Title 27:	:	Article 24: Freshwater Wet Article 25:		Article	es 1, 3, 17, 19, RR 380: Radiatio	27, 37;
Wild, Scenic and R Rivers 6NYCRR 608: Water Quality Certif		J Tidal Wetlands Article 27, Title Solid Waste Ma	7; 6NYCRR 360: nagement			•
PERMIT ISSUED TO CWM Chemical Serv	rices, Inc.		·	·	JELEPHONE NUA (716)754-	
ADDRESS OF PERMITTEE	L City, NY 1410	7	•	ē		-
CONTACT PERSON FOR PERMI	TTED WOLK		·		TELEPHONE HU	MBER
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Niagara	Porter & Lewis	ston n	elimile Cree		177_1_	M4 4793_1
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a 47.1 acre land	fill with a 2.8	MCY (net) c	apacity for	disposal of	solid and	hazardous
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quantities of se	ttled stormate	r (non-leach	ate runoff)	to a ditch	leading to	Twelvemil
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on 6/16/89, as a	mended, are her	eby incorpor	ated by refe	erenced and	made part	of this pe
By acceptance o with the ECL, all ap Conditions include	of this permit, the populations and as part of this populations of the populations are part of this populations.	ermittee agrees s, the General C ermit	s that the permonditions spec	it is continger ifled (See Reve	nt upon strict erse Side) and	compliance
Steven J.		270 Mic	higan Avery	Buffalo, W.Y.	14103-299	9
AUTHORIZED SIGNATURE	a. Dolaski		DATE	116193	Page 1 c	

ge 1 of 90 SkW Waste, State of Few Jersey...

ad Whitman

Department of Environmental Protection

Rubert C. Shinn, Jr. Commissioner

Division of Solid & Hazardous Waste 401 East: State Street P.O. Box 421 Trenton, New Jersey 08625-0421 Phone# (609) 292-9880 Fax# (609)633-9839 Hazardous Waste Facility Permit

Inder the provisions of N.J.S.A. 13:15-1 <u>et seq</u>. known as the Solid laste Management Act, this permit is hereby issued to:

> S & W Waste, Inc. 105 Jacobus Avenue Kearny, New Jersey 07032

for the Purpose of Operating a:

Hazardous Waste Treatment,

Storage and Transfer Facility

On Lot No.: 14, 14A

239

Block No:

Kearny Town

n the Municipality of:

Under Facility Permit No.:

Hudson 0907N1HP09

SEPA ID No.:

NJD 991 291 105

This permit is subject to compliance with all conditions specified derein and all regulations promulgated by the Department of Invironmental Protection.

This permit shall not prejudice any claim the state may have to riparian land, nor does it allow the permittee to fill or alter or allow to be filled or altered in any way, lands that are deemed to ge riparian, wetlands, stream encroachment areas or flood plains, r that are within the Coastal Area Facility Review Act (CAFRA) one or are subject to the Pinelands Protection Act of 1979, nor shall it allow the discharge of pollutants to waters of this State ithout prior acquisition of the necessary grants, permits, or pprovals from the Department of Environmental Protection or the U.S. Environmental Protection Agency. This permit does not uthorize the operation of a Major Hazardous Waste Facility as efined at N.J.A.C. 7:26G-14.6.

ulv 18, 1994

John A. Castner, P.E.,

ssuance Date

Assistant Director,

June 30, **1**998

Division of Solid and Hazardous Waste

eissuance Date uly 30, 1998

Effective Date

ugust 18, 2004 xpiration Date



ACKNOWLEDGEMENT OF NOTIFICATION

OF HAZARDOUS WASTE ACTIVITY

11/01/90

This is to acknowledge that you have filed a Notification of Hazardous Waste Activity for the installation located at the address shown in the box below to comply with Section 3010 of the Esource Conservation and Recovery Act (RCRA). Your EPA Identification Number for that installation appears in the box below. The EPA Identification Number must be included on all sipping manifests for transporting hazardous wastes; on all Annual Reports that generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal icilities must file with EPA; on all applications for a Federal Hazardous Waste Permit; and other hazardous waste management reports and documents required under Subtitle C of RCRA.

EPA I.D. NUMBER ->

NJD991291105

FACILITY NAME ->

S & W WASTE INC

MAILING ADDRESS ->

115 JACOBUS AVE SOUTH KEARNY, NJ 07032

INSTALLATION ADDRESS ->

105 JACOBUS AVE SOUTH KEARNY, NJ 07032

Form 3750-12AB (4-80)

D STATES ENVIRONMENTAL PROTECTION AGENCY REGION II 26 FEDERAL PLAZA NEW YORK, NEW YORK 10273

: Permits administration Branch, room 505

EXTER ROBERT MGR S & W WASTE INC 115 JACOBUS AVE SUTH KEARNY, NJ 07032 STATE OF MICHIGAN

NATURAL RESOURCES COMMISSION

JOY C SARTING METH J. CHARTESTS LANGY DEVLYST PAUL SEELE JAMES P. MEL JOY M. KEYNO HOLL! JOY M. SPANO



JOHN ENGLER, GOVERNOR DEPARTMENT OF NATURAL RESOURCES ETEVENS T MASON BULDING, PO BOX 2002A LANSING NE 48000-7828

ROLAND HARNES, Director

HEPLY TO: WARTE MANAGEMENT DATEON PO BOX SEQ11 LANSING ME 49525-7741

March 1, 1995

Mr. Jim Kreger Director of Technical Services City Environmental, Inc. 1923 Frederick Street Detroit, Michigan 48211

Dear Mr. Kreger:

SUBJECT: Interim Status

City Environmental, Inc., Frederick Street

MID 980 991 566

The Michigan Department of Natural Resources (MDNR) has received the following notification and applications submitted for the subject facility:

- Notification of Hazardous Waste Activity originally submitted to the U.S. EPA on June 27, 1990;
- Part A Hazardous Waste Permit Application originally submitted to the U.S. EPA on September 24, 1990; and
- Part A Hazardous Waste Permit Application submitted to MDNR on June 20, 1994, and amended August 4, 1994.

The notification and applications identify the subject facility as a commercial hazardous waste treatment and storage facility, and are required under both the federal Resources Conservation and Recovery Act (RCRA) and Michigan's Hazardous Waste Management Act, 1979 PA 64, as amended (Act 64), for the continued operation of the facilities.

City Environmental, Inc. may continue to manage the wastes and to operate the processes identified in the Part A application submitted to MDNR, subject to the provisions of R 299.9502(4) of the Michigan Administrative Code. Those provisions authorize the continued operation of existing processes until the MDNR has an opportunity to issue or deny an operating license for the facility. In order to maintain that authorization, CEI must comply with the design and operating standards of R 299.9601 and 40 CFR Part 265, and submit a complete Act 64 operating license application when requested by MDNR.

P.03 Ø 003

Mr. Jim Kreger

March 1, 1995

THE CEI SALES

City Environmental, Inc. also has a permit under Act 64 to construct additional storage and treatment processes at the facility. The construction permit was issued on January 23, 1990. The processes authorized in the construction permit may not be operated until City Environmental, Inc. obtains an Act 64 operating license from MDNR.

This acknowledgment does not constitute a license or approval of any of the hazardous waste management processes at the facility. The MDNR will evaluate the facility and its ability to properly manage hazardous waste when an Act 64 operating license application is submitted.

If you have any questions, please contact Mr. Steve Sliver of the Hazardous Waste Program Section at 517-373-1976.

Sincerely,

enneth Dund Kenneth J. Burda, Chief Hazardous Waste Program Section Waste Management Division 517-373-0530

Mr. Jim Frost, MDNR-Livonia Mr. Steve Sliver, MDNR HWP/C&E File

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APPENDIX C WASTE HANDLING PLAN

CHEMSOL, INC. SUPERFUND SITE REMEDIAL WORK ELEMENT I, SOILS

July 19, 2001 Revision No. 1

Prepared For:

de maximis, inc. 186 Center Street, Suite 290 Clinton, New Jersey 08809

Prepared By:

CODE ENVIRONMENTAL SERVICES, INC. 400 Middlesex Avenue Carteret, New Jersey 07008

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

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CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

PLAN AUTHORIZATION

This Waste Handling Plan (WHP) has been reviewed and hereby approved. By their signatures, the following undersigned certify that this WHP meets the requirements of the Contract Documents.

				*
Richard J. Abramo, President Code Environmental Services, Inc.	 			Date
	 		·	
Thomas M. Tomassetti, Project Manager Code Environmental Services, Inc.				Date
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Name, Title Company				Date
Name, Title	 <u>. </u>			Date
Company				

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

The following Waste Handling Plan has been developed by Code Environmental Services, Inc. (hereinafter referred to as CODE or the Contractor) in accordance with Specification Section 02300.1.3.I for the "Remedial Work Element I, Soils" contract to be performed at the Chemsol, Inc. Superfund Site in Piscataway, New Jersey.

This plan describes CODE's methods for handling the waste streams that will be generated in association with this Contract. Specifically, this plan includes CODES methods for dewatering, staging of materials, stabilization of free liquids, excavation and loading of materials, air monitoring, decontamination (personnel and equipment), and handling of miscellaneous waste materials.

A copy of the approved Waste Handling Plan will be maintained on-site by CODE during remedial construction for review by involved personnel.

1.0 GENERAL REQUIREMENTS

Earthwork operations will be conducted in accordance with Specification Section 02300, EARTHWORK AND MATERIALS, and as described herein. In general, all earthwork will be constructed to the elevations, lines, grades, and cross sections shown on the Contract Drawings and in accordance with the Technical Specifications.

Structures, utilities, sidewalks, pavements and other facilities within or immediately adjacent to excavation areas will be protected from damage created by earthwork operations.

Erosion and sediment controls will be installed and maintained in accordance with Specification Section 02931 and the Environmental Protection Plan. Stormwater protection measures will be implemented to protect excavation subgrades and to prevent surface water from entering excavations, from ponding on prepared subgrades, and from flooding the project site and surrounding areas.

CODE will contact New Jersey One-Call (1-800-272-1000) at least three (3) days prior to commencing subsurface activities to request utility mark-out. Identified utilities will be protected throughout the course of construction operations per the Specifications.

2.0 DEWATERING PLAN

CODE's Dewatering Plan for the Chemsol Inc. Superfund Site Remedial Work Element I, Soils project is provided in the subsections that follow. It has been prepared in accordance with Specification Section 02228, Item 1.2.A.

2.1 Water Control

Excavations will be graded as necessary to prevent surface water entry and minimize the need for water control/dewatering to the greatest extent possible. Any accumulated water will be handled as described in the following subsections to maintain the stability of the bottom and sides of the excavation.

2.1.1 Mechanical Dewatering

CODE will mechanically dewater the excavation as necessary.

Dewatering will occur during all excavation and backfill operations (as deemed necessary by the Project Manager depending upon actual conditions encountered in each excavation). Dewatering will be accomplished using a 3" trash pump. Water will be pumped into a temporary, 21,000 gallon Frac tank where it will be held to allow sediments to settle. Then, wastewater will be filtered using a 50-micron bag filtration system and transferred to the existing on-site treatment plant at a maximum flow rate of 10 gpm. The bag filters and sediments will be disposed off-site with the excavated soils (see Waste Characterization, Transportation and Disposal Plan).

2.1.2 Coarse Stone Placement

Addendum 1, Item 13 to the Project Specifications allows for the use of coarse stone placement as a water control method, except in wetland restoration areas as specified in Addendum #4 to the Project Specifications. CODE will utilize coarse stone as means of water control except in wetland restoration areas.

If standing water is encountered in the excavation in the upland restoration areas, CODE will backfill the excavation with coarse stone instead of the subsoil material. The coarse stone will be placed to approximately one six inches above the standing water level in the excavation. A geotextile and subsoil will then be placed over the stone to within six inches of the final grade. At a minimum, one foot (1') of subsoil will be placed below the topsoil and above the coarse stone.

NOTE: CODE, in consultation with the Engineer (a.k.a., the Trust's Representative - de maximis, inc.), will evaluate the actual properties of the coarse stone and subsoil to determine if the graded filter requirements as defined by the US Army Corps of Engineers criteria (1955 and 1971) have been met. If the stated criteria have been met, the geotextile material currently required by the Specifications will not be needed to prevent piping of fines and as such, will not be placed.

In wetland restoration, excavations containing standing water will be dewatered and backfilled and compacted with the subsoil material and topsoil.

2.2 Location of Dewatering System

Pump(s) will be placed in locations within the excavation as determined by the Project Manager. The Frac tank will be located in an area approved by the Engineer near the existing, on-site water treatment system. If an additional storage tank is required, it will be located immediately adjacent to the first

tank. Piping will be run from the pump(s) to the Frac tank(s) and from the Frac tank(s) to the on-site water treatment system. Piping will be protected throughout project duration from damage by construction vehicles.

NOTE: The Site Lay-Out Plan in Appendix 2 of this Construction Operations Plan shows the planned location of the Frac tank(s).

2.3 Equipment

If mechanical dewatering is required, CODE will utilize a 3" Trash Pump to dewater the excavation. The need for additional pumps will be evaluated by the Project Manager based on the recharge rate. Additional pumps will be supplied/utilized as necessary to control water.

CODE will mobilize a 21,000 gallon Frac Tank to the site to temporarily store water and allow sediment to settle prior to filtering and treatment in the existing, on-site water treatment plant. If the storage tank approaches 3/4 full, CODE will mobilize a second tank to handle additional water.

Miscellaneous pumps and hoses also will be supplied as necessary to properly operate the system.

2.4 Pumping Rate

The Project Manager will determine the pumping rate based on the actual recharge rate encountered in the excavation. CODE is aware that the maximum discharge to the existing water treatment system is limited to 10 gallons/minute, 24 hours/day, 7 days/week and will provide adequate temporary capacity (see Section 2.3) to maintain this maximum rate.

2.5 Duration of Dewatering Activities

Dewatering will be performed during excavation and backfill operations as deemed necessary by the Project Manager to control water. Upon completion of dewatering activities, the pumps and piping will be removed and the temporary storage tanks will be cleaned. Residual waste will be characterized and disposed in accordance with applicable laws and regulations.

3.0 MATERIAL STAGING

CODE plans to direct-load excavated material if characterization of the soils is complete and water management is not an issue. Therefore, material staging is not anticipated.

Should it become necessary to temporarily stage/stockpile soils, CODE will establish a staging area adjacent to the excavation. Excavated soil and sediments will be stockpiled on soils designated to be excavated. Berms will be constructed and excavation area will be graded to drain liquid from stockpiled soils back into excavation. If stockpile area will be in an area not designated to be excavated or in an area where clean fill has been placed, a temporary waste containment area (TWCA) will be constructed, as shown on the Drawings, to contain free liquid and promote runoff of clean water.

Stockpile soils will not be placed close to the open excavation in a manner that would destabilize the excavation slope or allow material to slough back into excavation. Material that has sloughed back into the excavation will be removed. Soil stockpiles and construction equipment will be placed away from the excavation at a minimum distance equal to the excavation depth.

4.0 STABILIZATION OF FREE LIQUIDS

Wet materials will be temporarily stockpiled adjacent to the excavation so that free liquids can drain back into the hole. If necessary, wet materials that would generate free liquids during transportation or would not be accepted at the disposal facility due to free liquids, will be mixed with dryer materials to eliminate free liquids. If this method does not eliminate free liquids, Code will apply an appropriate drying agent, such as cement kiln dust, for mixing with the wet soils. Prior to disposal, the material will pass paint filter test.

5.0 MATERIAL EXCAVATION AND LOADING

Material excavation, loading, and backfill operations will be performed as shown on the Contract Drawings in accordance with Specification Section 02300 using the following equipment:

- John Deere (JD) 330 Trackhoe;
- · JD 644 Rubber Tire Loader;
- · JD 650 Wide Track Dozer;
- JD 410 Backhoe Loader; and a
- · BW 213 Roller.

Identified hazardous soils will be excavated first. Material will direct loaded into transport vehicles for shipment off-site (see Waste Characterization, Transportation and Disposal Plan for details). Excavations will be backfilled once the Engineer has completed required sampling and instructed CODE to proceed. Hazardous soil excavation will be conducted in Level C PPE. Equipment utilized to for this operation will be decontaminated prior excavation of non-hazardous soils.

After the hazardous soil have been removed, CODE will begin excavating non-hazardous soil (two foot cut) starting at the southeast corner of the property and continuing north in accordance with the excavation plan. Material will be direct-loaded into transport vehicles for shipment off-site (see Waste Characterization, Transportation and Disposal Plan for details). Backfill will begin immediately following Engineer sampling. This procedure will allow CODE to create a moving excavation or face. This method will be utilized to allow vehicles to drive on clean soil and prevent cross-contamination.

Excavation, loading, transport and disposal, and backfill activities will continue until all identified soils have been removed, including sediment from the stream ditch located at the northern portion of the property. Non-hazardous soil excavation, loading, and backfill operations will be conducted in Modified Level D PPE.

6.0 AIR MONITORING

CODE's Site Health and Safety Officer (SHSO) will conduct air monitoring in accordance with Specification Section 01520 (DUST, ODOR AND NOISE CONTROL) and Section 7.0 of the Site-

Specific Health and Safety Plan (HASP).

6.1 Equipment

CODE will provide all necessary sampling devices, pumps, collection media, and support equipment to perform the sampling program. The sampling devices and pumps used shall be approved for use in combustible and/or flammable atmospheres.

Air monitoring equipment to be used by CODE in support of the air monitoring program includes:

- Particulate/aerosol monitor (MIE PDM 3 Miniram or equal) for dust; and a
 - Photoionization detector (PID) for organic vapor levels.

Equipment will be calibrated in accordance with the Specifications, Section 7.0 of the HASP, and per manufacturer's recommendations.

6.2 Dust Monitoring

Real time dust monitoring will be conducted by the SHSO continuously during earthwork activities and as requested by the Engineer.

The SHSO will calculate the Time Weighted Average (TWA) at least twice per working day with the use of the hand-held dust monitor. The monitor will be used to measure total dust concentrations in the vicinity of the work activities and along the nearest downwind property boundary. One complete set of measurements will be made in the morning, followed by another set of measurements in the afternoon. At each location, a 15 minute-average reading will be obtained. The two 15 minute-average readings will be combined to estimate the eight hour TWA concentration.

If the TWA exceeds 0.15 mg/m³ at the downwind property boundary or background level, whichever is greatest, or 5 mg/m³ in the immediate vicinity of the work, the SHSO will immediately notify the Engineer and implement methods to reduce dust levels. Procedures for dust control are provided in the Environmental Protection Plan.

NOTE: The SHSO will collected background dust level data prior to beginning work activities. If the background dust readings area greater than the maximum allowable dust levels identified above, the background dust levels will be used as the maximum.

6.3 Organic Vapor Monitoring

The SHSO will collect background organic vapor level data prior to beginning excavation activities using the PID. The background reading will be taken in an area removed and upwind of the site. Real time monitoring will be conducted continuously during earthwork activities and as requested by the Engineer. TWA will be calculated at least twice per working day with the PID. If the VOC action levels specified in Section 7.0 of the HASP are approached, the SHSO will evaluate potential response actions, including an upgrade in protection.

7.0 DECONTAMINATION

Personnel and equipment decontamination procedures to be employed when exiting contaminated work areas at this project site are detailed in the following subsections. Personnel shall also adhere to decontamination requirements as described in the HASP.

7.1 Personnel Decontamination

All personnel will be made aware of any personal habit that may allow contaminants into or onto the body. All personnel will check that regularly worn PPE (e.g., hard hats and liners, eye protection, etc.) is clean and in good condition. Any products for personal consumption or application are prohibited in any work area. Break area(s) will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these materials will be allowed. No PPE will be removed from a designated contaminated work area without proper decontamination or disposal.

All personnel leaving the contaminated work area will pass through a contamination reduction zone (CRZ) where they will remove their PPE and thoroughly wash/rinse exposed skin with water and biodegradable soap before leaving the project site.

Poly sheeting will line the floor of the CRZ which will be equipped with spill collection pads and sausage booms. Three mason pans will be provided in the CRZ for personnel decontamination (triplerinse procedure). The first pan will contain soap and water. The second and third pans will contain rinse water only. Used PPE will be placed in bags which will ultimately be secured with duct tape and placed in DOT approved drums for proper off-site disposal. Rinse water will collected for treatment in the on-site water treatment plant.

Personnel decontamination shall be as follows:

- Step 1: Place equipment and/or samples in area(s) designated in the Equipment Drop-Off Station.
- Step 2: Scrape gross contamination from boots and outer gloves, wash using soap in water solution, and rinse with water into a designated container in the CRZ
- Step 3: Remove tape from around boots and outer gloves (if worn) and deposit in collection drum. Remove overboots and outer gloves and place in collection drum.
- Step 4: Remove respiratory cartridges (if used) and place in collection drum.
- Step 5: Remove disposable coveralls and place in collection drum. Remove boots and store in appropriate location. Remove disposable inner gloves (if worn) and place in collection drum. Remove hard hat and safety glasses: decontaminate as necessary (wash with sanitizing solution [MSA sanitizing solution or equivalent], rinse with potable water, and allow to dry at the end of each day).

- Step 6: Remove respirator (if used) and deposit in plastic liner. Avoid touching face with fingers. Respirators shall be washed in a sanitizing solution (MSA sanitizer or equivalent), rinsed with potable water, and allowed to air dry at the end of each day.
- Step 7: Thoroughly wash/rinse exposed skin with water and biodegradable soap using mason pan number 1. Rinse in mason pan number 2. Rerinse in mason pan number 3. Shower and launder personal clothing as soon as possible upon completing daily activities.

The personnel decontamination facility will be set up in the CRZ as described above. Personnel shall be required to dress down and drum their used PPE in the decontamination area in accordance with the above seven step procedure.

All materials generated during decontamination will be drummed for disposal in accordance with applicable TSCA and RCRA regulations.

7.2 Equipment Decontamination

Generally, equipment decontamination will be performed as follows:

- 1. Conduct gross removal of solids at point of use.
- 2. Degrease if necessary.
- 3. Move to the existing equipment decontamination pad decontamination via pressure washing.

The SHSO will be responsible for inspecting decontaminated equipment. The SHSO shall certify in writing (form provided in HASP, Appendix 1) that each piece of equipment utilized in the Exclusion Zone has been properly decontaminated.

Wastewater from the equipment decontamination will be contained for treatment in the on-site water treatment system.

8.0 WASTE HANDLING

8.1 Drums

Handling of the drums is described in the Waste Characterization, Transportation, and Disposal Plan.

8.2 Soil Stockpiles

Handling of the soils in the stockpiles is described in Waste Characterization, Transportation, and Disposal Plan.

8.3 Concrete Demolition Debris

Handling of the concrete demolition debris is described in Waste Characterization, Transportation, and Disposal Plan.

8.4 Tanker Truck

Handling of the tanker truck and its contents is described in Waste Characterization, Transportation, and Disposal Plan.

8.5 Miscellaneous Demolition Debris

Metal (i.e., old fence, piping) will be disposed off-site at Naporano Iron & Metal in Newark, New Jersey. 8.6 Clearing and Grubbing Waste

Handling of the clearing and grubbing waste is described in Waste Characterization, Transportation, and Disposal Plan.

8.7 Municipal Trash

This waste will be placed into roll off container and disposed off-site to local municipal disposal facility.

APPENIDIX D

ENVIRONMENTAL PROTECTION PLAN



"Complete Solutions To Your Environmental Concerns"

ENVIRONMENTAL PROTECTION PLAN

CHEMSOL, INC. SUPERFUND SITE REMEDIAL WORK ELEMENT I, SOILS

> July 19, 2001 Revision No. 1

> **Prepared For:**

de maximis, inc. 186 Center Street, Suite 290 Clinton, New Jersey 08809

Prepared By:

CODE ENVIRONMENTAL SERVICES, INC. 400 Middlesex Avenue Carteret, New Jersey 07008

ENVIRONMENTAL PROTECTION PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

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ENVIRONMENTAL PROTECTION PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

PLAN AUTHORIZATION

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Richard J. Abramo, President	,		7 Date
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Thomas M. Tomassetti, Project Mana	ger		Date
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Company			

ENVIRONMENTAL PROTECTION PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

The following Environmental Protection Plan (EPP) has been developed by Code Environmental Services, Inc. (hereinafter referred to as CODE or the Contractor) in accordance with Specification Section 01110, ENVIRONMENTAL PROTECTION, for the "Remedial Work Element I, Soils" contract to be performed at the Chemsol, Inc. Superfund Site in Piscataway, New Jersey.

A copy of the approved EPP will be maintained on-site by CODE during remedial construction for review by involved personnel.

1.0 GENERAL REQUIREMENTS

In accordance with the Specification Section 01110.1.2.A, this Environmental Protection Plan addresses the procedures, materials, and equipment to be utilized by CODE to protect soil and water resources and perform debris disposal, dust control, odor control, noise control, spill control, and decontamination.

Generally:

- CODE shall maintain the environment in its natural state to the greatest extent possible during
 construction and enhance the natural appearance in its final condition. Environmental protection
 requires consideration of air, surface water, groundwater, wetlands, and land resources and involves
 noise, solid waste management, and management of other pollutants.
- In order to prevent and to provide for abatement and control of any environmental pollution arising from its activities during performance of this contract, CODE and any subcontractors shall comply with all applicable federal, state, and local laws and regulations.
- Although there appear to be no archaeologically sensitive areas within the proposed construction,
 CODE will avoid to the greatest extent possible, disturbing previously undisturbed areas during remedial construction.
- Material will not be burned on the site premises.

2.0 CONDITION SURVEY

Prior to the start of any on-site construction activities in any area, CODE's Project Manager and the Project Engineer (a.k.a., the Trust's Representative - de maximis, inc.) will make a joint condition survey of that area after which CODE shall prepare a brief report indicating on a layout plan the condition of all vegetation including trees, shrubs, crops, and grassed areas immediately adjacent to the work area, storage area, and access route(s) as applicable. This report will be signed by the Project Manager as to its accuracy and completeness and submitted to the Engineer for approval.

3.0 PROTECTION OF LAND RESOURCES

As per Specification Section 01110, Item 1.4, CODE will take appropriate measures to preserve the land resources within the project boundaries and outside the limits of permanent work in their present condition.

In areas where existing land resources must be disturbed to accommodate remedial construction, CODE will implement restoration measures designed to establish a natural site appearance. Construction activities will be confined to areas defined by the plans and specifications and established in the field by the licensed land surveyor.

3.1 Training

All employees (Contractor and Subcontractor) assigned to the project site shall receive training on environmental protection. The training will be provided in conjunction with the initial site safety briefing (see HASP) and shall address:

- Methods of detecting and avoiding pollution;
- On-site spill prevention and spill cleanup;
- Familiarity with pollution standards (statutory and contractual); and
- Installation and care of vegetative covers, plants, and other facilities to prevent and correct environmental pollution.

3.2 Prevention of Land Defacement

CODE, its employees, and its subcontractors will not deface, injure, or destroy trees or shrubs, nor remove or cut them without the authority of the Engineer. Trees and shrubs slated for clearing and grubbing will be identified by CODE's Project Manager during the Condition Survey (see Section 2.0) in consultation with the Project Engineer.

Protective barriers will be placed around trees located on the perimeter of the work and support areas which may be subject to harm (i.e., defacement, bruising, injury) from construction equipment or operations.

Ropes, cables, or guys will not be fastened to or attached to any existing nearby trees for anchorage unless approval is first received from the Project Engineer. In the event it is necessary to fasten such equipment to a nearby tree, CODE will do so in a manner which will avoid damaging the tree.

Stone, earth, or other material that is displaced into uncleared areas will be removed. Monuments and markers within the vicinity of the work and support areas will be identified and protected before construction operations commence.

3.3 Location of Storage Facilities

Storage and other facilities required to support construction will be located only in locations approved by the Project Engineer. The proposed placement of these facilities is identified on the Site Lay-Out Plan

provided in Appendix A of the Construction Operations Plan.

3.4 Post Construction Cleanup

CODE will remove all signs of temporary construction facilities, excess materials, or any other vestiges of construction as directed by the Project Engineer upon completion of site operations. Work and staging areas will be restored to preconstruction conditions in accordance with the Contract Documents.

4.0 PROTECTION OF WATER RESOURCES

CODE will not discharge to the area or surface water with fuels, oil bitumens, calcium chloride, acids, harmful materials, or any other waste materials. CODE will take preventative measures to prevent spills or releases of waste materials. The potential spill sources and spill preventative measures and response procedures are discussed in the Spill Containment Program (HASP, Appendix 6). All Contractor operations associated with this project will comply with applicable Federal, State, County and municipal laws concerning pollution of surface waters.

5.0 DEBRIS DISPOSAL

CODE will not dispose of any debris resulting from the contract work and any wastes, effluents, trash, garbage, oil, grease, chemicals, etc. in unauthorized work areas. If any waste material is dumped in unauthorized areas, CODE will remove the material and restore the area to its original condition in accordance with its Spill Containment Program (HASP, Appendix 6). Debris will be disposed in accordance with the Waste Handling Plan.

6.0 DUST CONTROL

In accordance with Specification Section 01520, Item 1.6, CODE will maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, and all other work areas within or outside the project boundaries free from excessive dust which would cause a hazard or nuisance to others. Visible dust will not be permitted to leave the site.

Sweeping and sprinkling/watering will be used to minimize creation and dispersion of dust. Calcium chloride or other chemicals methods will not be used for dust control. Severe dust problems will be controlled with mulch, gravel, or other temporary restoration methods subject to the Engineer's approval.

Clean (i.e., free from salt, oil, and other deleterious materials) water will be applied to control dust utilizing a tank spray bar and pump with discharge pressure gauge. The spray bar will be positioned at a height above grade with the nozzle spacing and spray pattern arranged in a manner which will provide complete coverage of ground with water. The application rate will be controlled so as to prevent surface run-off.

Dust control will be performed as deemed necessary by the Site Health and Safety Officer (SHSO) and/or Project Engineer. Dust monitoring will be conducted by the SHSO as stated in Section 7.0 of the HASP.

7.0 ODOR CONTROL

CODE will conduct all operations and maintain the work area so as to minimize odors associated with the

work activities. CODE will implement odor control procedures to suppress organic vapor concentrations or objectionable odors in the work area or at the Engineer's request.

The following procedures will be implemented to control vapors and odors during remedial construction:

- Limit exposure area; and
- Use an odor suppressant (Rusmar AC-645 Long Duration Foam or approved equal) to reduce offsite odors to acceptable levels. In accordance with Specification Section 01520, Item 1.4.B, CODE will apply foam to all open excavation areas unless otherwise approved by the Engineer.

Organic vapor monitoring will be conducted by the SHSO as stated in Section 7.0 of the HASP.

8.0 NOISE CONTROL

CODE will provide measures necessary to minimize noise occurring after normal work hours, assuming that prior approval is granted from the Engineer for work after normal hours. Care will be taken to prevent noise such that there will not be disturbance to neighboring residential or industrial sites.

The Hearing Protection Program provided in Section 5.1 of the HASP will be implemented in the event the OSHA limit of 85 dBA is exceeded for 8 hours per day or a peak level of 140 dBA is exceeded The Health and Safety Officer will monitor noise levels within the work zones to confirm that the exposure levels identified in the HASP are not exceeded or if supplemental protective devices are required.

9.0 DECONTAMINATION

Personnel and construction equipment that has come in contact with contaminated materials will be decontaminated in accordance with Section 9.0 of the Site-Specific Health and Safety Plan (HASP).

10.0 EROSION CONTROL

Surface drainage from cuts and fills within the construction limits (whether or not completed) and from borrow and waste disposal areas will be graded on a daily basis to control erosion within acceptable limits. Temporary control measures shall be provided and maintained per Specification Section 02931, EROSION AND SEDIMENT CONTROL, until permanent drainage facilities are completed and operative. The area of bare soil exposed at any one time by construction will be held to a minimum.

11.0 MAINTENANCE OF ENVIRONMENTAL CONTROL FACILITIES DURING CONSTRUCTION

CODE will maintain all facilities constructed for environmental control under this Contract while operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that the pollution is no longer being created or any discharge of waste materials to land or surface water does exist.

APPENDIX E SECURITY PROTOCOL



"Complete Solutions To Your Environmental Concerns"

SECURITY PROTOCOL

CHEMSOL, INC. SUPERFUND SITE REMEDIAL WORK ELEMENT I, SOILS

July 20, 2001 Revision No. 1

Prepared For:

de maximis, inc. 186 Center Street, Suite 290 Clinton, New Jersey 08809

Prepared By:

CODE ENVIRONMENTAL SERVICES, INC. 400 Middlesex Avenue Carteret, New Jersey 07008

SECURITY PROTOCOL

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

The following Security Protocol have been developed by Code Environmental Services, Inc. (hereinafter referred to as CODE or the Contractor) in accordance with Specification Section 01540, SECURITY, for the "Remedial Work Element I, Soils" contract to be performed at the Chemsol, Inc. Superfund Site in Piscataway, New Jersey.

A copy of this protocol will be maintained on-site by CODE during remedial construction for review by involved personnel.

1.0 PERSONNEL RESPONSIBILITIES

The Site Health and Safety Officer (SHSO) will be responsible for implementing and maintaining security measures in the work area. The SHSO will establish, maintain, and control access to the established Exclusion and Contamination Reduction Zones. The SHSO also will post warning signs along the site perimeter fence and ensure that the traffic control measures required by the Traffic Maintenance Plan are properly implemented and maintained. The SHSO will report to the Project Manager on all matters pertaining to Site Security and will supervise any personnel assigned to the security staff. Brian Schortje will serve as the SHSO for this project.

CODE will hire a part-time Site Security Guard to be on-site during material delivery and off-site waste shipment operations. The Site Security Guard will be stationed at the Site Entrance and will monitor and control site access/egress. He will be responsible for providing necessary traffic control and for maintaining the Site Log.

2.0 PROPOSED DAILY SECURITY OPERATIONS

2.1 General

CODE will safely guard all work, materials, equipment, and property from loss, theft, damage, and vandalism. The Trust's property and other private property will, to the greatest extent possible, be protected from injury or loss in connection with the performance of the Contract.

The site security program will be initiated at project mobilization and maintained throughout the construction period. Access restriction features will be removed and properly disposed at the conclusion of the Project.

Warning signs reading "Warning Hazardous Work Area, Authorized Entrants Only" will be posted at a minimum of every 500 feet. Access to work areas will be restricted by high visibility safety fence and/or caution tape.

2.2 Entry Control

CODE will restrict entrance of persons and vehicles into the project site. Entrance will only be allowed to authorized persons with proper identification. Authorized persons will include Contractor personnel, Subcontractor personnel, Trust Representatives, transport drivers, approved visitors (including oversight/regulatory personnel), and others performing work or furnishing services in connection with the project. The SHSO (or his designate) will maintain a log of workers and visitors to the site. This log (sample provided as Attachment 1) will be submitted to the Trust's Representative weekly.

There will be two vehicle entrance/egress gates. One gate will be located at the decontamination area. During decontamination, there will be someone at the pad, adjacent to the gate at all times. Therefore, gate control is in place. When the decontamination pad is not in use, the gate will be latched (not locked) during working hours for emergency/safety reasons The gate by the decontamination area will be locked during off (non-work) hours.

The Security Guard will be used to control traffic entering and leaving the site via the Arko Access Gate onto the public street (New Brunswick Avenue) during the pickup and deliveries of soil. A CODE employee will be stationed inside this gate to check in the vehicle deliveries and inspect the trucks. When not in use this gate will be latched (during work hours) or locked (during non-work hours).

The SHSO will be responsible for ensuring that the gates are locked/unlocked at appropriate times.

2.3 Visitors

Visitors wishing to enter controlled work zones will be required to:

- 1. Provide the SHSO with documentation of medical monitoring and training equivalent to the requirements of Site-Specific Health and Safety Plan (HASP) and Contingency Plan (CP); and to
- 2. Sign the Site Log (see Attachment 1).

Visitors also will receive site-specific health and safety instruction from the SHSO (or designated alternate) which includes:

- Hazard identification;
- PPE requirements;
- Decontamination procedures;
- Emergency procedures; and
- Other site-specific information as determined by the SHSO.

The SHSO will establish a safe location from which visitors can safely observe the site activity of interest.

NOTE: Emergency personnel may enter the work area without fully complying with the requirements of this subsection. Emergency crews will be briefed as to site conditions and hazards by the SHSO.

2.4 Parking

CODE will establish and maintain a suitable on-site parking area for use by construction workers, Trust Representatives, and others performing work or furnishing services in connection with the project. Workers

will access the site via Fleming Street. Parking will occur in the cul-de-sac and the existing parking lot. Vehicles will not be parked in locations where they may interfere with public traffic or construction activities.

2.5 Traffic Control

Contractor-related vehicles will adhere to posted traffic directions and speed limits at all times. Traffic control (i.e., flashing barricade lights, construction and maintenance signs, barricades, traffic cones, and other items as deemed necessary by the SHSO and/or Project Manager) will be used as appropriate to maintain the safety of both site workers and the general public. An off-duty police officer from the local police department will be stationed on New Brunswick Avenue to direct traffic at the site entrance during all periods of truck traffic. The SHSO will be responsible for establishing and maintaining required traffic controls on-site in accordance with the Traffic Management Plan.

2.6 Procedures to Follow in the Event of a Security Breach

The Project Manager will be notified immediately of any security-related incidents. Appropriate support agencies (i.e, police, fire) will be notified as needed by SHSO. All incidents will be reported to Project Management and the Trust's Representative in accordance with the Emergency Response and Contingency Plan (HASP, Appendix 5).

The SHSO (or his designated alternate) will monitor job-site safety via inspection at the start and completion of each day's work as well as monitoring the job site for this purpose throughout the day. Any safety violations shall be corrected and reported to the Project Health and Safety Manager. All observed safety violations will be immediately corrected, explained to the perpetrator, and reviewed at the next safety meeting. Excessive violations of the site safety rules will be grounds for disciplinary action which could lead to termination of the Contractor's personnel and expulsion of vendor or subcontractor personnel from the site.

ATTACHMENT 1 Site Log

Code Environmental Services, Inc. SITE LOG

		51161	200							
Project Nan Site Name:	ne: Remedial Work Element I, Chemsol, Inc. Superfund S		Contract No.: CODE Job No.:							
Date	Name	Company	Purpose for Visit	Entry/Exit Times						
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·	·			AM □ PM AM □ PM						
				AM						
	·		·	AM □ PM AM □ PM						
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APPENDIX F

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN and CONTINGENCY PLAN

CHEMSOL, INC SUPERFUND SITE REMEDIAL WORK ELEMENT I, SOILS

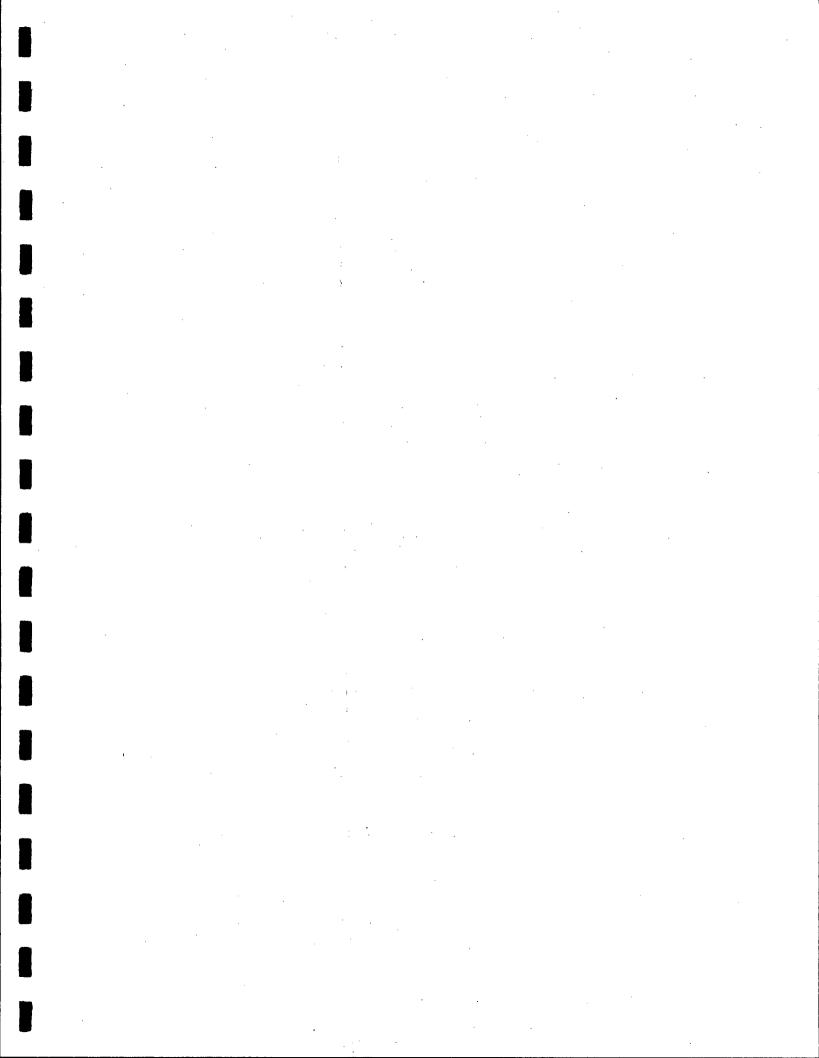
July 2, 2001

Prepared For:

de maximis, inc. 186 Center Street, Suite 290 Clinton, New Jersey 08809

Prepared By:

CODE ENVIRONMENTAL SERVICES, INC. 400 Middlesex Avenue Carteret, New Jersey 07008



CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

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CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

PLAN AUTHORIZATION

This Health and Safety Plan (HASP) has been reviewed and hereby approved. By their signatures, the following undersigned certify that this HASP meets the requirements of 29 CFR 1910.120 and all other applicable regulations for the protection of health and safety of all persons entering upon the project sites.

Richard J. Abramo, President Code Environmental Services, Inc.	,			Date
	•	·	-	
Thomas M. Tomassetti, Project Manager Code Environmental Services, Inc.		<u> </u>	<u> </u>	Date
James F. Mulligan, Jr., Project Health & S Code Environmental Services, Inc.	Safety Manag	ger		Date
		,		
Name, Title				Date
Company				
	:			
Name, Title Company				Date

.

SECTION 1.0 Introduction

SCOPE AND APPLICABILITY OF HASP

The following Health and Safety Plan (HASP) has been developed by Code Environmental Services, Inc. (hereinafter referred to as CODE or the Contractor) in accordance with Specification Section 1340 for the "Remedial Work Element I, Soils" contract to be performed at the Chemosol, Inc. Superfund Site in Piscataway, New Jersey. This HASP includes a Contingency Plan (CP) for Emergency Response and Spill Containment.

The health and safety protocol established in this plan are based on the site conditions and chemical hazards known and/or anticipated to be present from available site data. All operations and equipment used in association with this Contract shall, at a minimum, comply with the latest versions/revisions of:

- PL 91-596, Occupational Safety and Health Act (OSHA) of 1970.
- OSHA 29 CFR 1910, General Industry, Occupational Safety and Health (OSHA) Safety and Health Standards;
- > OSHA 29 CFR 1926, Construction Industry, OSHA Safety and Health Standards;
- > OSHA 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response;
- · OSHA 29 CFR 1910.1200, Hazard Communication;
- · OSWER 9285.1-03, Standard Operating Safety Guidelines, Environmental Protection Agency (EPA), 1992;
- OSWER 9285.2-05, Standard Operating Safety Procedures for Site Safety Planning, EPA;
- OHSS-87, Guideline for the Selection of Chemical Protective Clothing, Third Edition, EPA, 1987;
- Order No. 1440.2, Health and Safety Requirements for Personnel Engaged in Field Activities, EPA;
- NIOSH 85-115, NIOSH/OSHA/USCG/USEPA, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities;
- ANSI Z41.1, Protective Footwear;
- ANSI Z87.1, Practice for Occupational and Educational Eye and Face Protection;
- · ANSI Z88.2, Practice for Respiratory Protection, 1980;

- · ANSI Z88.6, Physical Qualifications for Respirator Use, 1986;
- American Conference of Government Industrial Hygienist (ACGIH), *Threshold Limit Values and Biological Exposure Indices*, Current Edition;
- · Other applicable Federal, State, and Local regulations;
- · Specification Section 1340, Health and Safety and Contingency Plans; and
- · CODE's Corporate Health and Safety Plan, a copy of which will be maintained on-site by the Site Health and Safety Officer (SHSO).

Before site operations begin, all employees involved in this project will:

- 1. Read or review the contents of this HASP with the Project Health and Safety Manager and/or Site Health and Safety Officer; and
- 2. Acknowledge, in writing, on the attached HASP Certification Form, their understanding of this HASP and all revisions made to it.

A copy of the approved HASP will be maintained at the project site during remedial construction for review by involved personnel during clean-up.

This HASP will be updated, revised, and/or supplemented over the life of the Contract as provided herein or as necessary to address changes to the Contract resulting from actual site conditions encountered and/or modifications to the contracted Scope of Work. All updates, revisions, and/or supplements will be submitted to the Trust's Representative for review and approval prior to field implementation in accordance with the Contract Documents.

1.2 **DEFINITIONS**

- A. "The Trust" The Chemsol Inc. Superfund Site Environmental Remediation Trust (the Owner).
- B. "Trust's Representative" (de maximis, inc.) The person/firm, retained or hired by Chemsol Inc. Superfund Site Environmental Remediation Trust, to carry out and/or supervise activities associated with the Remedial Work Element I, Soils Contract at the Project Site.
- C. "Contractor" (Code Environmental Services, Inc. or CODE) The company hired by Chemsol Inc. Superfund Site Environmental Remediation Trust to conduct the Remedial Work Element I, Soils at the Project Site.
- D. "Authorized Personnel" Any person, such as task-specific personnel, project personnel, oversight personnel, contractors, and consultants whose presence is authorized at the project site by Chemsol Inc. Superfund Site Environmental Remediation Trust.
- E. "Contaminant Reduction Zone" The area or corridor between the Exclusion Zone and the

Support Zone. This is the area where decontamination occurs.

- F. "Exclusion Zone" The area in which all entering personnel must be directly involved in the ongoing work, have designated personal protective equipment (PPE), and meet training and medical monitoring requirements. This includes any activity which disturbs the surface soils, groundwater, or surface water at this site. The exclusion zone will be defined by an approximate 25-foot radius around the work area, which will be suitably marked.
- G. "Oversight Personnel" Any person designated by the state government, federal government, or Chemsol Inc. Superfund Site Environmental Remediation Trust who is assigned to carry-out oversight work. Oversight personnel must comply with the requirements of this HASP and CP.
- H. "ppm" Parts per million; expressed as PPM(V) for gases and vapors.
- I. "Project Director" is responsible for the overall direction and completion of the project.
- J. "Project Health and Safety Manager" The designated person responsible for the overall content, proper implementation, and maintenance of this site HASP and CP. This person is also responsible for the identification of any hazards that are not discussed in the Plan. Upon a change in planned activities that could affect site conditions and Health and Safety requirements, the Project Health and Safety Manager shall evaluate the effectiveness of the PPE program for the site and for the planned activities. This shall include reviewing the site inspection notes, employee use and decontamination of PPE review of site air monitoring and calibration data, and consideration of possible PPE program modifications. This report shall be made available to site personnel.
- K. "Project Manager" is responsible for the direction and coordination of the field activities.
- L. "Project Personnel" Any person or contractor, assigned by Chemsol Inc. Superfund Site Environmental Remediation Trust, its consultants, or its contractors to carry out work at the Project Site (e.g., Project Chemist/Field QC Officer, etc.).
- M. "Project Site" The area defined by the Construction Operations Plan, as well as contiguous areas to which access is required for the execution of the field tasks which may be set forth in the Construction Operations Plan.
- N. "Secure Zone" The area within a radius of approximately 50 feet established from the center of the work area and indicated by a visible surface device. Personnel entering a secure zone, must have the designated PPE and meet the training and medical monitoring requirements set forth in this HASP.
- O. "Site Health and Safety Officer (SHSO)" The person(s) appointed by the Contractor to supervise field implementation of this HASP and CP. This person is responsible for conveying the information contained in this HASP and CP to the workers present on site, and in the absence of the Project Health and Safety Manager from the site, will fulfill the obligations of

the Project Health and Safety Manager. This includes attendance at Site Safety meetings, conducting site training and orientation sessions, reporting all incidents which happen to personnel under his/her supervision, the timely submission of required forms, and selection of proper PPE, if the need arises to make changes.

- P. "Site Health and Safety Officer (Alternate)" is responsible for fulfilling health and safety duties in the absence of the SHSO.
- Q. "Support Zone" The appropriate location, outside of the exclusion zone, for a command post. This area will be used as a medical station, equipment and supply location, and for any other administrative or support functions necessary for efficient operations at the site. Any potential contaminated equipment or clothing must remain outside of the support zone. Periodic monitoring will be conducted to ensure that this area remains free from contamination.
- R. "Task-Specific Site Personnel" Any person or contractor assigned by Chemsol Inc. Superfund Site Environmental Remediation Trust and/or its consultants/contractors to carry out work at the project site.

1.3 VISITOR REQUIREMENTS ON SITE

Visitors wishing to enter controlled work zones will be required to provide the SHSO with documentation of medical monitoring and training equivalent to the requirements of this HASP and to sign the Visitor's Entry Log (see Appendix 1). Visitors also will receive site-specific health and safety instruction from the SHSO which includes:

- · Hazard identification;
- PPE requirements;
- Decontamination procedures;
- · Emergency procedures; and
- Other site-specific information as determined by the SHSO.

The SHSO will establish a safe location from which visitors can observe the site activity of interest.

NOTE: Emergency personnel may enter the work area without fully complying with the requirements of this subsection. Emergency crews will be briefed as to site conditions and hazards by the SHSO.

SECTION 2.0 Project Organization & Personnel Responsibilities

CODE has assigned the following key personnel to the Chemsol Inc. Superfund Site Remedial Work Element I, Soils project:

- Project Director Richard J. Abramo;
- · Project Manager Thomas M. Tomassetti;
- Field Chemist/Site QC Officer Fred Andlauer;
- · Project Health and Safety Manager James Mulligan; and
- · Site Health and Safety Officer Brian Schortje.

Resumes for these personnel are provided in Proposal Attachment A.

In addition to the key management personnel identified above, CODE will assign up to three (3) operators and three to four (3-4) laborers to the Site.

All personnel assigned to the project site will be 40-hour trained and medically monitored in accordance with 29 CFR 1910.120 as required by Sections 4.0 and 6.0, respectively of this HASP. Pertinent documentation regarding personnel training, fit testing, and medical monitoring will be maintained on-site during construction activities for inspection by the Trust's Representative and/or Oversight Personnel in accordance with the Specifications.

2.1 PERSONNEL RESPONSIBILITIES

The Project Director will be responsible for overall direction and completion of this project.

The Project Manager will report to the Project Director and will be responsible for direction and coordinating of field activities. The Project Manager shall serve as the Contractor's primary contact with the Trust's Representative.

The Field Chemist/Site QC Officer will report to the Project Director and will be responsible for field implementation of the Construction Quality Control Plan (CQCP) and for collecting all required waste characterization samples. The Field Chemist/Site QC Officer will assist the Trust's Representative in the collection of other required samples as directed.

The Project Health and Safety Manager will be responsible for the overall content, proper implementation, and maintenance of this HASP and CP (see Section 2.1.1). He will report directly to the Project Director and will be represented in the field by the Site Health and Safety Officer (SHSO).

The SHSO will be responsible for field implementation of this HASP and CP and for insuring the project team's compliance to the site-specific health and safety protocol established herein (see Section 2.1.2).

2.1.1 Project Health and Safety Officer

The Project Health and Safety Officer is responsible for:

- · Overall content, proper implementation, and maintenance of this site HASP and CP.
- Identification of any hazards that are not discussed in this Plan.
- Evaluating the effectiveness of the PPE program for the site and for the planned activities in the event of a change in planned activities that could affect site conditions and Health and Safety requirements. This shall include:
 - > reviewing the site inspection notes, employee use and decontamination of PPE
 - > reviewing site air monitoring and calibration data, and
 - > consideration of possible PPE program modifications.
 - Performing preconstruction indoctrination and periodic training of all on-site personnel with regard to this safety plan and other safety requirements to be observed during construction including (at a minimum):
 - Potential hazards.
 - · Personal hygiene principles,
 - · Personal protective equipment (PPE),
 - Respiratory protection equipment usage and fit testing (when appropriate), and
 - · Emergency procedures dealing with fire and medical situations.

2.1.2 Site Health & Safety Officer (SHSO)

The SHSO will supervise field implementation of this HASP and CP. The SHSO will be responsible for conveying the information contained in this HASP and CP to the workers present on site, and in the absence of the Project Health and Safety Manager from the site, will fulfill the obligations of the Project Health and Safety Manager. This includes attendance at Site Safety meetings, conducting site training and orientation sessions, reporting all incidents which happen to personnel under his/her supervision, the timely submission of required forms, and selection of proper PPE, if the need arises to make changes.

The SHSO may appoint an Alternate Site Health and Safety Officer to serve as his on-site representative in his absence. The name and qualifications of the Alternative SHSO will be provided to the Trust's Representative for approval upon request.

2.1.3 Occupational Physician

The Occupational Physician (Medical Consulting Team) shall be available to provide annual physicals and to provide additional medical evaluations of personnel when necessary. CODE's Occupational Physician is:

C. Lipman, M.D.
DOCTORS MEDICENTER P.A.
Plaza 12, Suite 4A
835 Roosevelt Avenue
Carteret, New Jersey 07008
(732) 969-0240 or (732) 969-2152

2.2 SURVEILLANCE & INTERNAL AUDITING RESPONSIBILITIES

The SHSO (or his designated alternate) will monitor job-site safety via inspection at the start and completion of each day's work as well as monitoring the job site for this purpose throughout the day. Any safety violations shall be corrected and reported to the Project Health and Safety Manager. All observed safety violations will be immediately corrected, explained to the perpetrator, and reviewed at the next safety meeting. Excessive violations of the site safety rules will be grounds for disciplinary action which could lead to termination of the Contractor's personnel and expulsion of vendor or subcontractor personnel from the site.

2.3 SUBCONTRACTORS

Subcontractors are required to obtain a copy of this HASP and CP prior to site admittance and to follow its guidelines while on the job. Subcontractors shall provide addendums and/or insertions to this HASP and CP as necessary to adequately address their intended Site operations.

Subcontractors must provide proof of their employees' training as it pertains to the specific duties they will perform. Subcontractors are responsible for providing their employees with the PPE required by this HASP and for ensuring that this equipment is properly monitored, tested, and maintained. Subcontractors are responsible for ensuring that their employees conform to all applicable health and safety regulations.

SECTION 3.0 Task/Operation Safety Health Risk Assessment

3.1 PROJECT OVERVIEW

3.1.1 Site Background

The Chemosol, Inc. Superfund Site is located on approximately 40 acres at 100 Fleming Street in Piscataway, New Jersey (see Site Location/Layout Map in Appendix 3). Previous site investigations, including the Remedial Investigation (CDM, 1996) identified various chemical constituents in the site soil, groundwater, surface water, and/or sediments. These constituents (noted in Table 1 at the end of this Section) may potentially represent an occupational health hazard during certain field operations.

As future data are generated, they will be reviewed, and, if necessary, this HASP and CP will be revised and amended accordingly.

3.1.2 Scope of Work Covered by HASP

CODE will furnish all labor, materials, and equipment required to conduct the following Scope of Work (SOW) in accordance with the Contract Documents, Contract Drawings and the Technical Specifications, and in accordance with the methods, established in the related approved Plans.

- Submittals;
- · Permits;
- · Mobilization;
- · Temporary facilities and utilities;
- · Dust and odor controls;
- · Site maintenance:
- · Health and Safety;
- · Soil erosion and sediment controls;
- · Site clearing;
- · Site access improvements;
- · Traffic control;
- · Excavation;
- · Decontamination and removal of tanker truck;
- · Removal and resetting of Well C-1 structure;
- · Removal and replacement of piping and associated electrical components;
- · Demolition and disposal of concrete slabs and foundations;
- · Backfilling;
- · Removal and replacement of fence within limits of excavation;
- Characterization and disposal of drums and waste soil stockpiles;
- · Waste characterization, transportation, and disposal;
- · Site restoration:
- · Wetlands restoration; and
- Demobilization.

The above SOW shall be performed as specified in the Project Specifications and Contract Drawings and detailed in the Contractor's Construction Operations Plan; Construction Schedule; Waste Characterization, Transportation and Disposal Plan; Waste Handling Plan; Environmental Protection Plan; Construction Quality Control Plan; and Site Security Plan.

The site shall be operated and maintained by CODE throughout the duration of the Contract as specified in the Contract Documents and the referenced Contractor Work Plans. The requirements of this HASP and CP will be in effect from initial site mobilization through final demobilization.

3.2 TASK/RISK ANALYSIS

An assessment and analysis of chemical, physical, and biological hazards associated with this project is presented in the subsections that follow.

Task	Potential Exposure Risk
Mobilization/Demobilization	Low
Hazard Assessment	Low
Site Set-Up	Slight to Moderate
Clearing and Grubbing	Moderate to Moderately High
Haul Road Construction	Moderate to Moderately High
Drum Sampling/Consolidation	High
Tanker Decontamination/Removal	High
Concrete Slab Demolition/Disposal	Moderate to Moderately High
Hazardous Soils Excavation/Handling/Backfill	High
Non-Hazardous Soils Excavation/Handling/Backfill	Moderate to Moderately High
Removal/Reinstallation of GW Piping System	Moderate to Moderately High
Topsoil Installation	Moderate
Wetlands Restoration	Slight
General Site Cleanup/Work Area Restoration	Low

Anticipated Exposure Risk Definitions:

LOW =	Non-Intrusive Wor	kNo Chance of Exposure.

SLIGHT = Non-Intrusive Work, Possible Safety Hazards with Tools-Little to No Chance of Exposure.

MODERATE = Non-Intrusive Work, Possible Safety Hazards with Powered Tools, Heavy Equipment, and/or work near or in water. Little to No Chance of Exposure to Contaminants.

MODERATELY Intrusive Work, Possible Safety Hazards with Equipment--Exposure to Contaminants.

HIGH = Possible.

HIGH = Intrusive Work, Possible Safety Hazards with Equipment--Exposure to Contaminants Probable.

3.2.1 Chemical Hazards

The primary chemical hazards associated with this Contract are polychlorinated Biphenyls (PCBs). As documented in Table 1 at the end of this section, PCBs are known human carcinogens and may be teratogens (i.e., they may damage the adult reproductive system). Exposure to PCBs can occur through inhalation or absorption and cause an acne like skin rash (called chloracne). PCBs can damage the liver. High exposure can damage the nervous system, causing numbness, weakness and tingling ("pins and needles") in the arms and legs.

Trace levels of volatile organic compounds (VOCs) also have been identified in site soils (see Table 1). A lead concentration above the TCLP was detected in Test Pit 7.

Potential routes of exposure to the Site's contaminants of concern are dermal contact or inhalation of airborne contaminants (either vapors or dusts) generated or released during site activities. To a lesser degree, incidental ingestion of site contaminants as a result of improper PPE usage or decontamination is another potential route of exposure. The levels of personal protective equipment (PPE) identified in Section 5.0 of this HASP have been assigned by task, known/anticipated chemical toxicity, and potential exposure risks. Action levels for PPE upgrade (see Section 7.0) have been set conservatively to minimize the risk of exposure to field personnel.

Table 1 at the end of this section provides information on the toxicological, chemical, and physical properties and action levels for the potential contaminants of concern at the Site. Project specific monitoring requirements and action levels based upon site condition are specified in Section 7. Additional information regarding Site's contaminants of concern at the Site is provided in the subsections that follow.

3.2.2 Physical/General Hazards

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The following general and physical hazards may be associated with this project.

1. **Potential Hazard:** Possible injury resulting from operation of heavy equipment.

Procedure(s) to Mitigate Hazard: (1) Before any machinery or mechanized equipment is placed in use, it will be inspected and tested by a competent person and certified to be in safe operating condition. CODE will designate a competent person to be responsible for the inspection of all machinery and equipment daily and during use to make sure it is in safe operating condition. Tests will be made at the beginning of each shift during which the equipment is to be used to determine that the brakes and operating systems are in proper working condition. All inspections will be documented. Any machinery or equipment found to be unsafe will be deadlined and its use prohibited until unsafe conditions have been corrected. (2) Only designated personnel holding required licenses will operate machinery and mechanized equipment. (3) Equipment deficiencies observed at any item that affect their safe operation will be corrected before continuing operation. (4) Adhere to the Mechanical Equipment Inspection and Operation SOP provided in Section 10.2.7 of this HASP. (5) Utilize

appropriate warning signs and backup alarms.

2. Potential Hazard: Excavations.

Procedure(s) to Mitigate Hazard: (1) Provide adequate sloping of the sides of the excavations as per OSHA requirements. (2) Regularly inspect the excavations for changing conditions. (3) Ensure that material from the excavations is placed away from the edge to prevent cave-ins and pit instability.

(4) Backfill excavations once Engineer approval is received to minimize the number of open excavations. (5) Adhere to Excavation Safety SOP provided in Section 10.1.4 of this HASP.

Any excavation exceeding the four foot level will be supervised by a competent person who will determine when subsidence control measures are required, what those controls will be, and how they will be implemented. The competent person will inspect excavations and controls to ensure reinforced structures are barricaded or marked (barricade tape and/or traffic cones or equivalent) during active excavation activities. In the event excavations must remain open prior to backfill, those excavations will be fenced or barricaded. Compliance with OSHA 29 CFR 1926 Subpart P will be maintained.

3. Potential Hazard: Above and/or Underground Utilities within Work Area(s)

Procedure(s) to Mitigate Hazard: Notify New Jersey One-Call (1-800-272-1000) a minimum of three days prior to performing any excavation or drilling activities to request utility markout. Ensure that electrical lines (if any) are not energized.

4. **Potential Hazard:** Work in Confined Spaces.

Procedure(s) to Mitigate Hazard: Confined space entries can present many health and safety hazards if not performed properly. CODE will comply with all OSHA requirements concerning confined spaces, including monitoring and supervising the spaces. CODE's confined space entry program is provided in Section 11.0 of this HASP.

5. **Potential Hazard:** Possible exposure to continuous sound pressure levels in excess of 85 dBA continuous noise or 140 dba impact or impulse noise (i.e., split-spoon hammer) during heavy equipment operation.

Procedure(s) to Mitigate Hazard: (1) Wear disposable ear plugs or ear muffs with a NRR rating of 20 or greater any time that noise is determined to be a hazard by the SHSO. (2) Adhere to Hearing Protection SOP provided in Section 5.1 of this HASP.

In the absence of instrumentation, an appropriate rule of thumb is that when normal conversation is difficult at a distance of two to three feet, hearing protection is required.

6. **Potential Hazard:** Uncontrolled release of hazardous energy (kinetic and/or potential [stored]).

Procedure(s) to Mitigate Hazard: The Lockout/Tagout procedures provided in Section 10.1.2 of this HASP will be followed when working on machines and equipment in which the unexpected energizing or start-up of the machines or equipment, or release of stored energy could cause injury to employees.

7. Potential Hazard: Slips, Trips, and Falls.

Procedure(s) to Mitigate Hazard: (1) Exercise extreme caution in all work areas. (2) Be sure of footing during equipment access/egress and when moving through the work area. (3) Avoid stepping or standing on uneven or unsteady surfaces. (4) Clearly delineate open pits, wells, and other fall hazards with caution tape. Securely cover as appropriate. (5) Adhere to the Walking and Working

Surfaces SOP provided in Section 10.2.3 of this HASP.

9. Potential Hazard: Lifting/Carrying

Procedure(s) to Mitigate Hazard: (1) Limit lifting to low weight. (2) Lift with legs, not back. (3) Use fork lift, drum cart, or other appropriate equipment whenever possible. (4) Get assistance.

10. **Potential Hazard:** Possible traffic hazards

Procedure(s) to Mitigate Hazard: Coordinate site operations to avoid impeding, interfering with, or in any way restricting normal traffic flow. Provide flagmen, signs, and other measures as deemed necessary.

11. Potential Hazard: Housekeeping

Procedure(s) to Mitigate Hazard: (1) Store equipment properly. (2) Remove rubbish/scrap material from the work area. (3) Adhere to the Site Housekeeping SOP provided in Section 10.2.4 of this HASP.

12. Potential Hazard: Hazardous Material Storage

Procedure(s) to Mitigate Hazard: (1) Segregate flammable/combustible liquid from ignition sources. (2) Store in approved containers. (3) Keep solvent wastes, oily rags, and liquids in fire resistant containers. (4) Adhere to the Fire Protection and Prevention SOP provided in Section 10.2.2 of this HASP.

13. **Potential Hazard:** Operation of hand/power tools

Procedure(s) to Mitigate Hazard: (1) Verify that guards and safety devices are in place before, during, and after operation. (2) Tag and remove defective tools from service. (3) Maintain and inspect per manufacturer's recommendations. (4) Utilize proper eye protection.

14. Potential Hazard: Electrical

Procedure(s) to Mitigate Hazard: (1) Utilize approved grounding and bonding procedures. (2) Guard and maintain electrical lines/cords. (3) Tag/remove damaged equipment from service.

Any temporary electrical power used for this project will conform to NFPA 70 and ANSI C2. Where possible, motorized vehicles will be grounded. Air monitoring and sampling equipment will be rated intrinsically safe for Class I, Division 1, Grounds A, B, C, and D areas. All portable electrical equipment will be protected by Ground Fault Circuit Interrupters (GFCI). Clearances to adjacent overhead transmission and distribution electrical lines will be sufficient for the movement of vehicles and operation of construction equipment. The requirements stated in 29 CFR 1926 and NFPA 70 shall be followed.

15. **Potential Hazard:** Exposure to extremely hot, humid and/or extremely cold, windy weather.

Procedure(s) to Mitigate Hazard: Adhere to the health and cold stress monitoring program provided in Section 6.2 of this HASP.

The Standard Operating Procedures (SOPs), engineering controls, and work practices set forth in Sections 8.5 (Safe Work Practices) and 10.0 (SOPs and Accident Prevention Practices) of this HASP are to be strictly adhered to by all site personnel to minimize the potential for physical injury.

3.2.3 Biological Hazards

3.2.3.1 Ticks And Chiggers

Ticks and chiggers may be present in vegetated areas during the spring. summer, and fall seasons.

Preventative measures include protective clothing; head/hair protection; and the use of insect repellant containing DEET on all exposed areas and coveralls. Workers should check their bodies thoroughly for ticks and should bathe soon after returning home. Remove any ticks carefully, using a gentle, firm, tugging motion with fine tweezers. Do not kill the tick before it has been removed. Workers should save the ticks and monitor their bites, checking for a rash and other symptoms (up to about eight weeks after the bite).

3.2.3.2 Poison Ivy

Poison ivy may also be present during the spring, summer, and fall seasons. Contact with it should be avoided, however, if one has come in contact with it. the affected skin area should be washed thoroughly with soap and cool water. Care should be taken when handling clothing or any other items that have come in contact with poison ivy. If an allergic reaction occurs, a physician's advice should be sought.

3.2.3.3 Yellow Jackets and Bees

Yellow jackets may be encountered nesting on or below the ground surface around areas of thick vegetation. Other bees may also be encountered in trees. Care should be taken when entering these areas for the first time. If an allergic reaction occurs, a physician s advice should be sought. Personnel with known allergic reactions to bee stings should carry appropriate medication.

3.2.3.4 Bloodborne Pathogens

The following program has been developed in compliance with OSHA regulation 29 CFR 1910.1030 to protect first aid responders who may come into contact with potentially infectious materials. Potentially, all employees trained in first aid may have exposure to infectious materials.

In general, employees shall:

- Avoid contact with blood:
- > Clean-up blood with disinfectant,
- > Wear Personal Protective Equipment (PPE) while cleaning up blood; and
- > Contact the SHSO regarding medical evaluation if exposed (i.e., blood contacts eyes, mouth, or nose).

In addition, the following general guidelines will apply:

- All employees will wash their hands immediately after potential exposure to infectious materials.
- No eating, drinking, smoking, or applying cosmetics or lip balm will be permitted in designated work, decontamination and first aid areas.
- PPE (i.e, gloves, CPR shields, and respirators) will be available with all first aid kits.
- PPE will be used by employees who are trained in first aid to prevent exposure to blood or other potentially infectious materials.
- If a garment (including gloves) is penetrated by blood or other potentially infectious materials, the garment or garments will be removed immediately or as soon as feasible.
- All equipment and environmental and working surfaces will be cleaned and decontaminated with an appropriate disinfectant immediately or as soon as feasible when surfaces are overtly contaminated or after any spill of blood or other potentially infectious materials.
- After an exposure incident, a confidential medical evaluation and follow-up will be immediately available to the exposed individual. Arrangements for the medical evaluation should be coordinated with the Project Health and Safety Manager of SHSO.

First Aid Kits will be equipped with antiseptic hand cleanser or antiseptic towelettes.

Employees will receive training on blood borne pathogens from the Project Health and Safety Manager and/or SHSO as part of the pre-entry safety briefing and thereafter when new tasks or procedures will affect the employee's occupational exposure.

3.2.4 Radiological Hazards

No radiological hazard is expected during this project.

TABLE 1 Chemical Hazard/Exposure Data Summary Chemsol, Inc. Superfund Site

	1			I
Chemical of Concern	Action Levels	Routes of Exposure	Warning Property/Rating	Physical Properties/ Health Hazard Information
Polychlorinated Biphenyls (PCB) Primary Contaminant of Concern	OSHA & ACGIH: ≥50%PEL SKIN NIOSH: 0.001 mg/m³ IDLH: 5 mg/m³	Contact Inhalation Ingestion	Inadequate - However due to the low volatility it is assumed unless agitated this substance does not present a volatile vapor or gas respiratory threat. For dust conditions where this material may cling to particles, use a HEPA filter. APRs are approved for escape only when concentrations exceed the exposure limits. Concentrations greater than the exposure limits required PAPR or supplied air respirators. Recommended gloves: Butyl rubber - <24 hrs. Neoprene rubber - <24.0 hrs. Silver Shield or Viton (for pure product)	LEL: NA UEL: NA Appearance & Odor: Colorless pale yellow, viscous liquid or solid (Aroclor 54 below 50°F) with a mild, hydrocarbon odor. Incompatibilities: Strong oxidizers. Health Hazard Info: Irritating to eyes and skin. Chronic effects of overexposure may include potential to cause liver damage, chloracne, and reproductive effects. Recognized as possessing carcinogenic properties by NIOSH and NTP.
Volatile Organic Comp	ounds (Detected at Trace	Levels in Si	re Soils)	
Benzene	PEL = 10 ppm	Inhalation	Inadequate - Odor threshold 1.4-120 ppm. The use	SUSPECTED AND KNOWN CARCINOGENS -
2-Dutanone	PEL =- 200 ppm	Ingestion Contact	of half-face air purifying respirators with organic vapor cartridge up to 10 ppm is acceptable despite	HANDLE WITH EXTREME CAUTION.
Carbon Tetrachloride	PEL = 10 ppm	Comaci	the inadequate warning properties, providing the	Irritant, pulmonary edema, sensitizer, dermatitis,
Chlorobenzene	PEL = 75 ppm		cartridges are changed at the beginning of each shift.	dizziness, nausea, convulsions, kidney and liver damage.
Chloroform	PEL = 50 ppm		Sint.	Exposure can irritate the eyes, nose and throat. High
1-4,-Dichlorobenzene	PEL = 50 ppm - C 75 ppm - TWA	,	Recommended gloves: Butyl/neoprene blend - >8.0 hrs.	concentration can cause you to become dizzy, lightheaded, or to pass out. Very high levels can cause paralysis,
1,2-Dichloroethane	PEL = 100 ppm		Silver shield as a liner - >8.0 hrs. Viton - >8.0 hrs.	trouble breathing and death. Contact can irritate the skin. Prolonged exposure can cause drying, scaling and even
1,1-Dichloroethene	PEL = 1 ppm			blistering.
Tetrachloroethene*	PEL = 5 ppm			
Trichlorethene	PEL = 350 ppm		•	•
Vinyl Chloride	PEL = 1 ppm			
Lead	OSHA: 0.05 mg/m ³	Contact Inhalation	The use of an air purifying, full face-piece respirator with a high efficiency particulate air filter for	Appearance & Odor: Metal/: Heavy ductile, soft gray solid.

TABLE 1 Chemical Hazard/Exposure Data Summary Chemsol, Inc. Superfund Site

Chemsol, Inc. Su	iperiuna Site				
Chemical of Concer	n Action Levels	Routes of Exposure	Warning Property/Rating	Physical Properties/ Health Hazard Information	
Detected above TCLF at Test Pit 7	NIOSH: 0.15 mg/m ³ NIOSH: 0.10 mg/m ³ IDLH: 100 mg/m ³ as lead	Ingestion	concentrations up to 2.5 mg/m³. Recommended gloves: This is in the particle form, therefore any glove suitable to prevent skin contact (nitrile has been the one most widely used for the other substances).	Incompatibilities: Strong oxidizers, peroxides, sodium acetylide, zirconium, acids. Health Hazard Info: Overexposure via ingestion or inhalation may result in metallic taste in the mouth, dry throat, thirst. Gastrointestinal disorders (burning stomach pain, nausea, vomiting, possible diarrhea sometimes bloody or black, accompanies by severe bouts of colic), CNS effects (muscular weakness, pain, cramps, headaches, insomnia, depression, partial paralysis possible coma and death). Extended exposure may result in damage to the kidneys, gingival lead line, brain and anemia.	
NOTES:					
	ccupational Safety & Health ables Z-1A, Z-2	Administration	's Final Rule Limits Permissible Exposure Limit for an 8	8-hour, time-weighted average (TWA) from CFR 1910.1000,	
ACGIH TLV = A	V = American Conference of Governmental Industrial Hygienists' Threshold Limit Value for an 8-hour, TWA.				
NIOSH REL = N	ational Institute of Occupati	onal Safety and	d Health Recommended Exposure Limit (10-hour).		
NIOSH IDLH = N	National Institute of Occupational Safety and Health Level Immediately Dangerous to Life and Health.				

LEL = Lower Explosive Limit UEL = Upper Explosive Limit

Central Nervous System
Short Term Exposure Limit (15 minute)
parts per million CNS = STEL =

ppm =

 $mg/m^3 =$ milligrams per cubic meter of air

Detected above regulatory limit in one site soil sample. All other VOCs detected below regulatory limits.

SECTION 4.0 Site Personnel Training Requirements

All project personnel and task-specific project personnel assigned to the Chemsol, Inc. Superfund Site will be in compliance with the training requirements of 29 CFR 1910 and 1926 as listed below. Project and task-specific project personnel shall have met one of the following requirements prior to the start of operations at the site:

- A 40 hour minimum hazardous materials safety & health course, as stipulated in 29CFR1926.65 e(3); and
- > An eight (8) hour minimum refresher course per year after the 40 hour minimum training has occurred (29 CFR 1926.65.e[8]).;

On-site managers and supervisors will be in compliance with the additional supervisory training requirements of 29 CFR 1926.65.e(4). Designated emergency responders will be in compliance with the additional training requirements of 29 CFR 1926.65.e(7).

All subcontractor field personnel must have completed introductory hazardous waste site training or equivalent work experience as defined in OSHA Standard 29 CFR 1910.120(e) and 8 hours of refresher training meeting the requirements of 29 CFR 1910.120(e)(8) prior to performing field work at the Site. All subcontractor personnel serving as supervisors must also provide documentation of supervisory training as per 29 CFR 1910.120(e)(4). Subcontractors must certify that each employee has had such training by sending the Project Health and Safety Manager a letter, on company letterhead and by providing copies of certificates for all subcontractor personnel participating in site activities.

As stipulated in 29 CFR 1910.1200, all field personnel assigned to this project shall receive site-specific training in:

- · Hazards of the work place (chemical/physical/biological/radiological);
- · Standard safety operation procedures (see Section 10.0 of this HASP);
- Proper use of Personnel Protective Equipment;
- · Decontamination procedures;
- · Work zones;
- · Emergency procedures and contingency plans;
- Respirator equipment training, qualitative fit testing and respirator maintenance;
- · Emergency first aid procedures and/or CPR;
- · On-site communication procedures;
- · Air monitoring techniques and sample taking;
- · Hazardous material recognition;
- · Importance of "Buddy System";
- · Toxicology and basic chemistry;
- · Site entry; and
- · Use of emergency escape packs.

Training certificates and applicable test records for site personnel shall be submitted under separate cover to the Trust's Representative prior to site mobilization The SHSO shall maintain copies of all applicable training certificates on-site during remedial construction for inspection by the Trust's Representative and/or Oversight Personnel.

4.1 SAFETY MEETINGS

All Contractor and Subcontractor field personnel will be required to attend Pre-Entry Site Briefings which will include a review of the requirements of this HASP and CP. On-site safety meetings will occur weekly and all on-site remedial personnel will be required to attend. Items to be considered at the safety meetings may include, but are not limited to:

- Review of available analytical or relevant process data that may relate to the potential for worker exposure during task execution;
- Delegation of responsibility (i.e., field technicians, emergency backup personnel, competent persons, logistical and support requirements);
- · Type and frequency of environmental and personal monitoring to be performed;
- · Initial levels of protection required and the anticipated potential for upgrading;
- · Decontamination requirements;
- · Emergency response procedures;
- · Functional and interpretive problems that may have been encountered while using monitoring instrumentation, personal protective or other support equipment;
- · Personal hygiene;
- · Fire prevention;
- Equipment operation; and
- · Discussion of on-going and planned work activities.

Any personnel who miss the on-site safety meetings shall be required to attend a review by the SHSO (or designated alternate) before he/she will be allowed to work at the discretion of the SHSO (or designated alternate).

In addition to the weekly safety meetings, the SHSO (or designated alternate) will conduct daily safety briefings with site personnel prior to the start of work.

4.2 EMERGENCY RESPONSE TRAINING

As part of each site personnel's training, emergency response procedures will be covered. Training in site-specific emergency procedures will be provided by the SHSO before work begins on-site. This training will include, but is not limited to, the following;

- · Emergency chain-of-command;
- · Communication methods and signals;
- · Location of phones and emergency numbers;
- · Use of emergency equipment;
- · Evacuation and emergency procedures;
- Off-site support;

- Site-specific hazards; Decontamination procedures; Standard operating procedures; and Location and use of first aid equipment.

SECTION 5.0 Personal Protective Equipment

Based on an evaluation of potential hazards (see Section 3.2), the following minimum levels of protection have been assigned for this project:

Work Activity	Initial Level of Protection	Action Level for PPE Upgrade/Downgrade ^D
Site Preparation & General Site Operations (i.e. establishment of work areas, installation of erosion controls, site access improvements, etc.)	Modified Level D The minimum level of protection in the exclusion and contamination reduction	Upgrade to Level C if Sustained Readings ^A of ≥50%PEL are recorded or if an IDLH Condition is Probable.
Site Clearing	zones will be Modified Level D PPE	(Refer to table 1)
Non-Hazardous Soil Excavation		(Reger to tuble 1)
Demolition of Concrete Slabs/Foundations	4	
Removal/Replacement of Well C-1 Structure		·
Backfilling		
Fence Removal/Replacement		
Wetlands Restoration		
Site Restoration		· .
Hazardous Soil Excavation	Level C PPE with Air Purifying	Consult with H&S Manager &
Tanker Decontamination	Respirator with Organic Vapor/ HEPA Cartridge	Trust's Representative regarding potential downgrade if
Drum Handling Operations	The A cardiage	Sustained Readings ^A of <50%PEL are recorded.
Confined Space Entry Operations	Level B PPE	PPE Downgrade Not Permitted
Support Zone Operations/Activities	Non-hazardous, general construction safety attire	Not Applicable.

NOTES:

- A. For the purposes of this discussion, a sustained reading is defined as a consistent reading on a real-time monitoring instrument which does not vary substantially from a peak or a result which is averaged over a period of time (i.e., 5 minutes). Sustained is called out in order to avoid downgrading PPE based on a single "hit" or "miss" instead of the average concentration present. Unless a chemical has a ceiling value, the TWA and STEL values are averages for exposure over 8-hours or 15 minutes and not single peaks. The values for the above action levels are based on TWA & STEL values.
- B. The levels of PPE identified have been assigned by task, known/anticipated chemical toxicity (Table 1), and potential exposure risks. Tables 1 and 2 of this HASP identify PPE usage and limiting criteria.
- C. Respiratory protection shall conform to OSHA 1910.134. Personnel assigned to work in the Exclusion Zone or CRZ must have passed a Respirator Fit Test in accordance with OSHA 3079. Fit tests will be administered by the Project H&S Manager.
- D. The SHSO shall be responsible for determining the need for PPE upgrade or downgrade based on actual conditions encountered in the field.

Project-specific PPE requirements are summarized below.

- The **Modified Level D PPE** ensemble will include work clothing as dictated by weather; a hard hat; steel toe/steel shank work boots; SARANEX coated Tyvek coveralls, disposable latex inner gloves; Silver Shield outer gloves, disposable skid-proof over booties, and safety glasses. Hearing protection shall be utilized as directed by SHSO (or designated alternate).
- The **Level C PPE** ensemble will include MSHA/NIOSH full or half-face air purifying respirators with combination organic vapor, and/or high efficiency particulate cartridge/filter; Saranex-laminated Tyvek or equivalent coverall; latex undergloves; nitrile outerglove; a hard hat; safety glasses; steel toe/steel shank work boots; and neoprene or butyl rubber overboots. Hearing protection shall be utilized as directed by SHSO (or designated alternate).
- The Level B PPE ensemble (if required for confined space entry) will include an airline respirator, chemical suit; overboots; neoprene gloves with liners; a hard hat; and steel-toe work boots. Hearing protection shall be utilized as directed by SHSO (or designated alternate).

The levels of protection identified are to be considered preliminary and may change based on air monitoring information collected by the SHSO (or designated alternate) during project work. No Changes to the specified levels of protection will be made without the approval of the Project Health and Safety Manager.

Additional information regarding PPE levels (i.e., required and optional equipment, protection provided, general usage guidelines, limiting criteria) is provided in Table 2 at the end of this section.

5.1 HEARING PROTECTION PROGRAM

The company will use any and all possible controls to protect employees from sound levels in excess of the levels shown in the table below. If these controls are not sufficient, ear protective devices will be provided. Exposure to impulse or impact noise should not exceed 140 dBA peak sound pressure level.

Duration per days in hours	Sound level dBA Slow Response
8	90
6	92
4	. 95
3	97
2	100
1.5	102
· 1	105
0.5	110
0.25 or less	115

5.2 RESPIRATORY PROTECTION PROGRAM

Following the implementation of all engineering controls and work practices to limit exposure, employees may be required to use respiratory protection to reduce their exposure to airborne hazardous substances. Section 5.0 of this HASP addresses the for respiratory protection and who should wear it. The standard requirements which determine the selection and use of respirators depend on the site and hazards present, but respirators for

emergency use will always be available.

Employees must only use respirators that are approved by the Mine Safety and Health Administration (MSHA) and the National Institute for Occupational Safety and Health (NIOSH) and adhere to the regulatory requirements set forth by the Occupational Safety and Health Administration (OSHA) in 29CFR1910.134 and 29CFR1926.103. Respirators must be cleaned/disinfected, maintained, inspected, and stored pursuant to 29CFR1910.134.

5.2.1 Medical Clearance/Fit Testing

As per CODE's Medical Surveillance Program, all employees assigned to tasks where they must wear a respirator must have prior clearance from the Occupational Physician and the Project Health and Safety Manager. Limitations and restrictions will be strictly enforced and no employee will be permitted to use a respirator if he or she has any face abnormality or facial hair which may affect the fit or seal of the face piece.

5.2.2 Training

Any employee who may be required to wear a respirator must have completed a thorough training course on the use, maintenance and inspection of respirators. The training course will cover the topics required by 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response, and 29 CFR 1910.134, Respiratory Protection and include the following:

- Basics of respiration
- > Basics of respiratory hazards
- > Capabilities and limitations of respirators
- > Inspection of respirators
- > How a respirator should be worn
- > Cleaning and disinfecting respirators
- > Storage of respirators
- > Respirator specific training
- Negative and positive pressure fit check

Those employees required to use a negative pressure respirator will undergo an annual review, testing and refitting to ensure safe and proper utilization. This review and testing will be done in accordance to OSHA 29 CFR 1910.1025, Appendix D.

5.2.3 Inspection

All respirators to be used on a job will be inspected by the employees prior to using them. Respirators will be inspected be inspected for damage before and after each use. Each employee, after training, will be responsible for inspection. The following will be inspected:

- > Tightness of connections
- > Face piece
- > Headbands
- > Inhalation valve
- Cartridge or filter fittings
- > Pliability of rubber or elastometer parts
- > Signs of deterioration

Any malformation, distortion, missing parts, cracks, etc. in the respirator will cause the respirator to be deemed useless until the respirator is properly repaired by a qualified technician. If necessary, a new respirator will be issued.

5.2.4 Cleaning/Disinfection

Respirators will be cleaned after each use either by the employees or a person assigned to the decontamination of personal protection equipment.

The steps required to clean a respirator after use include:

- a. Remove the cartridges and headbands
- · Disassemble all respirator parts
- Wash all respiratory parts (except cartridges and headbands) in a cleaner-disinfectant solution or use soap and hot (100°F) water
- · Rinse completely in clean, warm water to remove all traces of detergent and disinfectant
- e. Air dry in a clean area
- · Re-assemble the respirator
- g. Store cleaned respirator in a sealed bag to protect it against dust, sunlight, extreme temperature, moisture or abrasives

5.2.5 Maintenance

Respirator maintenance will be conducted in accordance with manufacturer's recommendations by qualified personnel.

5.2.6 Storage

Respirators will be stored in a sealed bag to protect against dust, sunlight, extreme temperature, moisture or abrasives. Inhalation holes will be covered with duct tape (or equivalent) immediately after leaving a contaminated area. The tape will be left on until the respirator is donned for the next entry into a contaminated area. This tape will prevent any contaminants from being dislodged from the cartridge.

Respirators should be packed or stored so that the face piece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position. Respirators shall not be hung by the straps.

5.2.7 Standard Procedures for Use of Respirators

Each employee will adhere to the following Standard Operating Procedures (SOPs) for respirator use.

- Carefully inspect the respirator using the procedures set forth in Section 5.2.3 prior to entering potentially contaminated work areas.
- · Remove duct tape from cartridge prior to entering potentially contaminated work areas (if applicable).
- · Conduct positive and negative pressure tests each time a respirator is donned.

Positive Pressure Test: Close off the exhalation valve with hand. Breathe into the mask. The face-to-face piece seal is satisfactory if some pressure can be built up inside the mask and sustained.

Negative Pressure Test: Close off the inlet openings of the cartridge with the palm of the hand. Inhale gently so that a vacuum occurs inside the mask. Hold breath for 10 seconds. If the vacuum is sustained and no inward leakage is detected, the respirator fits properly.

- Do not remove respirator in contaminated work areas. In the event of a medical emergency or if breathing becomes difficult, remove respirator and immediately leave or remove injured person(s) from the contaminated work area.
- · Wear respirator with straps inside disposable garments in order to maintain respiratory protection during personnel decontamination/contaminated garment removal.

5.2.8 Respirator Types

The type of respirator to be used and who is required to wear them will be identified on a site-specific basis based on the types of remedial work to be performed and the potential for exposure to airborne contaminants. Recommended respirator types are identified in Section 5.0 of this HASP and CP. CODE requires that all employees follow the strict instructions for respirators or they will become ineligible to wear them.

TABLE 2
DESCRIPTION OF PPE LEVELS

DESCRIPTION OF PPE LEVELS				
LEVEL OF PROTECTION	EQUIPMENT	PROTECTION PROVIDED	SHOULD BE USED WHEN:	LIMITING CRITERIA
A	Required			
	> Pressure-demand, full- facepiece SCBA or pressure-demand supplied- air respirator with escape	The highest available level of respiratory, skin, and eye	> The chemical substance has been identified and requires the highest level of protection for skin, eyes,	➤ Fully-encapsu- lating suit material must be compatible with
	SCBA. > Full-encapsulating, chemical-resistant suit.	protection.	and the respiratory system based on either:	the substances involved.
	 Inner chemical-resistant gloves. Chemical-resistant safety boots/shoes. 		→ measured (or potential for) high concentration of atmospheric vapors, gases, or particulates	
	Two-way radio communications.		or	
•	Optional ➤ Cooling Unit.		→ site operations and work functions involving a high potential for splash,	
	 Coveralls. Long cotton underwear. Hard hat. Disposable gloves and boot 		immersion, or exposure to unexpected vapors, gases, or particulates of materials that are harmful	
	covers. Hearing Protection.		to skin or capable of being absorbed through the intact skin.	
			Substances with a high degree of hazard to the skin are known or suspected to be present, and skin contact is possible.	
			> Operations must be conducted in confined, poorly ventilated areas until the absence of conditions requiring Level A	·
			protection is determined.	

TABLE 2				
DESCRIPTION	OF	PPE	LE	VELS

LEVEL OF PROTECTION	EQUIPMENT	PROTECTION PROVIDED	SHOULD BE USED WHEN:	LIMITING CRITERIA
В	Required > Pressure-demand, full- facepiece SCBA or pressure-demand supplied- air respirator with escape SCBA. > Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two- piece chemical splash suit; disposable chemical resistant one-piece suit). > Inner and outer chemical- resistant gloves. > Chemical-resistant safety boots/shoes. > Hard hat. > Two-way radio communications. Optional > Coveralls. > Disposable boot covers. > Face shield. > Long cotton underwear.	The same level of respiratory protection but less skin protection than Level A. It is the minimum level recommended for initial site entries until the hazards have been further identified.	 The type and atmospheric concentration of substances have been identified and require a high level of respiratory protection, but less skin protection. This involves atmospheres: → with IDLH concentrations of specific substances that do not represent a sever skin hazard; or → that do not meet the criteria for use of airpurifying respirators. ➤ Atmosphere contains less than 19.5 percent oxygen. ➤ Presence of incompletely identified vapors or gases is indicated by direct-reading organic vapor detection instrument, but vapors and gases are not suspected of containing high levels of chemicals harmful to skin or capable of being absorbed through the skin. 	 ➤ Use only when the vapor of gases present are not suspected of containing high concentrations of chemicals that are harmful to skin or capable of being absorbed through the intact skin. ➤ Use only when it is highly unlikely that the work being done will generate either high concentrations of vapors, gases, or particulates or splashes of material that will affect exposed skin.
C	Required > Air-purifying, canister- equipped respirator. > Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one- or two- piece chemical splash suit; disposable chemical- resistant one-piece suit). > Inner and outer chemical- resistant gloves. > Chemical-resistant safety boots/shoes. > Hard hat. > Two-way radio communications.	The same level of skin protection as Level B, but a lower level of respiratory protection.	 The atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect any exposed skin. The types of air contaminants have been identified, concentrations measured, and a canister is available that can remove the contaminant. All criteria for the use of air-purifying respirators are met. 	 Atmospheric concentration of chemicals must not exceed IDLH levels. The atmosphere must contain at least 19.5 percent oxygen.

TABLE 2		
DESCRIPTION	OF PPE	LEVELS

DESCRIPTION	OF PPE LEVELS	or on succession was a succession	The state of the s	ender og med en er
LEVEL OF PROTECTION	EQUIPMENT	PROTECTION PROVIDED	SHOULD BE USED WHEN:	LIMITING CRITERIA
C (Continued)	 Coveralls. Disposable boot covers. Face shield. Escape mask. Long cotton underwear. 			
Modified D	Required ➤ Chemical-resistant clothing ➤ Safety boots/shoes. ➤ Safety glasses or chemical splash goggles. Inner and outer chemical-resistant gloves. ➤ Hard hat.	No respiratory protection.	 The atmosphere contains no known hazard. Work functions preclude the potential for unexpected inhalation of hazardous levels of any chemical. 	➤ The atmosphere must contain at least 19.5 percent oxygen.
	Optional > Hearing Protection. Disposable boot covers. > Escape mask. > Face shield. Required		➤ The atmosphere contains no	➤ The atmosphere
D	 Work Clothing. Safety boots/shoes. Safety glasses or chemical splash goggles. Hard hat. Optional Gloves. Hearing Protection. Escape mask. 	No respiratory protection. Minimal skin protection.	known hazard. Work functions preclude splashes, immersion, or the potential for unexpected inhalation of or contact with hazardous levels of any chemical.	must contain at least 19.5 percent oxygen.
	➤ Face shield.			

SECTION 6.0 Medical Surveillance

6.1 GENERAL

Medical monitoring^t is required by OSHA as a means of monitoring worker exposure to certain toxic substances under 29 CFR 1910.120(f), OSHA's Hazardous Waste Operations and Emergency Response Standard.

6.1.1 Medical Examinations

An examination will be given not more than one year prior to a worker reporting to the job site. The Medical Surveillance Exams will meet the requirements of the USEPA, OSHA Standard 29 CFR 1910.120 and 1910.1025.

At a minimum, the following protocol will comprise the Baseline yearly medical examination:

- · Complete Medical and Work Histories
- · General Physical Examination
- · Pulmonary Function
- · Chest X-Ray (the number of X-rays will be at the direction of the Occupational Physician)
- · Electrocardiogram
- · Eye Exam and Visual Acuity
- · Audiometry
- · Urnianlysis
- · Blood Chemistry (Hematology, Serum Analyses, Heavy Metals Toxicology)

Medical examinations will be performed on each individual involved in Contract field work as follows:

- · At least once every twelve (12) months.
- At the termination of employment or reassignment to an area where the individual would not be covered if that individual has not had an examination within the last six (6) months.
- As soon as possible upon notification by an individual having developed signs or symptoms indicating possible overexposure to any hazardous material, health hazards, or that the individual has been injured or extensively exposed above the PEL or published exposure levels in an emergency situation.

NOTE: Any employee who develops a lost-time injury or illness during the period of this contract as a result of work in the Exclusion Zone will be evaluated by the Occupational Physician. The employee's supervisor shall be provided with a written statement indicating the employee's fitness and ability to return to work, signed by the Occupational Physician prior to allowing the employee to re-enter the Exclusion Zone.

At more frequent intervals if the examining physician determines that an increased frequency of examination is required.

A copy of the physician's statement certifying each employee's ability to work at task-specific operations will be maintained in the project file by the SHSO.

6.1.2 Sub-Tier Subcontractor Medical Monitoring Requirements

On-site personnel entering the Exclusion Zone, and not employed by CODE, shall be required to provide documentation that he/she meets the medical surveillance requirements of this HASP; has been certified fit to enter contaminated areas required personal protective equipment necessary for this project; and has received 40-hour OSHA training pursuant to 29 CFR 1926.65. Documentation will submitted to the Project Health and Safety Manager. Truck drivers for the off-site transportation subcontractors are exempt from this requirement, but will be required to remain in their cabs at all times when not in support zones.

6.2 HEAT AND COLD STRESS MONITORING PROGRAM

The SHSO (or designated alternate) will visually monitor personnel for signs of heat or cold overexposure.

- 1. Heat weakness, dizziness, fainting, nausea, headaches, cool and clammy skin, profuse sweating, slurred speech, weak pulse, and dilated pupils.
- 2. Cold Shivering, apathy, decreased muscle function, decreased level of consciousness, glassy stare, frostbite, decreased vital signs.

The SHSO (or designated alternate) will be responsible for implementing the following program when the ambient air temperatures exceed 75°F (heat stress monitoring) or drop below 32°F (cold stress monitoring).

6.2.1 Heat Stress Monitoring

Site personnel who wear protective clothing allow body heat to be accumulated with an elevation of the body temperature. Heat cramps, heat exhaustion, and heat stroke can be experienced, which, if not remedied, can threaten life or health. Therefore, a current edition of an American Red Cross <u>Standard -First Aid</u> book or equivalent will be maintained on site at all times so that the SHSO and site personnel will be able to recognize symptoms of heat emergencies and be capable of controlling the problem.

When protective clothing is worn (especially Levels A, B, and C) the suggested guidelines for ambient temperature and maximum wearing time per excursion are:

Ambient <u>Temperature (°F)</u>	Maximum Wearing Time Per Excursion (Minutes)
Above 90	15
85 to 90	30
80 to 85	60
70 to 80	90
60 to 70	120
50 to 60	180

One method of measuring the effectiveness of employees' rest-recovery regime is by monitoring the heart rate as follows:

- During a 3-minute period, count the pulse rate for the last 30 seconds of the first minute, the last 30 seconds of the second minute, and the last 30 seconds of the third minute.
- Double the count.

If the recovery pulse rate during the last 30 seconds of the first minute is at 110 beats/minute or less and the deceleration between the first, second, and third minutes is at least 10 beats/minute, the work-recovery regime

is acceptable. If the employee's rate is above that specified, a longer rest period is required, accompanied by an increased intake of fluids.

In the case of heat cramps or heat exhaustion, "Gatorade" or its equivalent is suggested as part of the treatment regime. The reason for this type of liquid refreshment is that such beverages will return much-needed electrolytes to the system. Without these electrolytes, body systems cannot function properly, thereby increasing the represented health hazard.

This liquid refreshment will be stored in a cooler at the edge of the decontamination zone in plastic squeeze bottles. The plastic bottles will be marked with individual's names. Disposable cups with lids and straws may be used in place of the squeeze bottles. Prior to drinking within the decontamination zone, the project personnel shall follow the following decontamination procedures:

- A. Personnel shall wash and rinse their outer gloves and remove them.
- B. Personnel shall remove their hard hats and respirators and place on table.
- C. Personnel shall remove their inner gloves and place them on table.
- D. Personnel shall wash and rinse their face and hands.
- E. Personnel shall carefully remove their personal bottle or cup from the cooler to ensure that their outer clothes do not touch any bottles, cups, etc.
- F. The used bottle or cups will not be returned to the cooler, but will be placed in a receptacle or container to be cleaned or disposed of.
- G. Personnel shall put back on respirators and hard hats and don a new pair of disposable inner gloves prior re-entering the hazardous zone.

When personnel are working in situations where the ambient temperatures and humidity are high-and especially in situations where protection Levels A, B, and C are required the SHSO or Designated alternate must:

- Assure that all employees drink plenty of fluids ("Gatorade" or its equivalent);
- Assure that frequent breaks are scheduled so overheating does not occur; and
- Revise work schedules, when necessary, to take advantage of the cooler parts of the day (i.e., 5:00 a.m. to 1:00 p.m., and 6:00 p.m. to nightfall).

6.2.2 Cold Stress Monitoring

Whole-body protection shall be provided to all site personnel that have prolonged exposure to cold air. The right kind of protective clothing shall be provided to site personnel to prevent cold stress. The following dry clothing shall be provided by CODE as deemed necessary by the SHSO (or designated alternate).

- Appropriate underclothing (wool or other);
- · Outer coats that repel wind and moisture;
- · Face, head, and ear coverings;
- Extra pair of socks;

- Insulated safety boots; and
- Glove liners (wool) or wind- and water-repellant gloves.

The SHSO will use the equivalent chill temperature when determining the combined cooling effect of wind and low temperatures on exposed skin or when determining clothing insulation requirements.

Site personnel working continuously in the cold are required to warm themselves on a regular basis in the onsite hygiene facility. Warm, sweet drinks will also be provided to site personnel to prevent dehydration. The SHSO shall follow the work practices and recommendations for cold stress threshold limit values as stated by the current edition of the <u>Threshold Limit Values for Chemical Substances and Physical Agents and Biological</u> <u>Exposure Indices</u> by the American Conference of Governmental Industrial Hygienists or equivalent cold stress prevention methods.

SECTION 7.0 Air Monitoring Program

The SHSO (or designated alternate) will perform air monitoring as described herein in accordance with Specification Sections 01340, Item 7.0 and 01520. The purpose of this Air Monitoring Program is to:

- · Identify and quality airborne contaminants and total dust particles in order to verify and/or determine the level of PPE required;
- · Determine if dust control procedures need to be implemented; and
- · Determine air and dust monitoring methods and frequencies.

7.1 SAMPLING EQUIPMENT

CODE will provide all necessary sampling devices, pumps, collection media, and support equipment to perform the sampling program. The sampling devices and pumps used shall be approved for use in combustible and/or flammable atmospheres.

Air monitoring equipment to be used by CODE in support of the air monitoring program includes:

- Particulate/aerosol monitor (MIE PDM 3 Miniram or equal) for dust; and a
- · Photoionization detector (PID) for organic vapor levels.

A Combustible Gas Indicator/Oxygen Meter (Gastech GT 201 LEL/O2 Monitor or equal) will be mobilized to the site in the event confined space entry is required (not anticipated).

7.2 CALIBRATION

Calibration methodologies to be employed will follow manufacturer's recommendations. All calibration data will be recorded on the Air Monitoring Report Form (see Appendix 1). Any monitoring equipment failing to take the proper calibration or failing to hold a calibration will be replaced. Work will not be permitted until the malfunctioning piece of equipment has been replaced.

At a minimum, the portable total dust monitor will be calibrated at the beginning of each workday in accordance with the manufacturer's specifications. The unit will be programmed to measure particulate levels over a 15 minute averaging time. The monitor then will be carried to each sampling location, in turn, according to the predetermined schedule. At each location, the unit will be activated to measure a 15 minute-average time. The value obtained from the digital read-out will be noted on the Air Monitoring Report Form.

At a minimum, the PID will be calibrated at the beginning of each workday in accordance with manufacturer's instructions. The monitor will be carried to each sampling location, in turn, according to the predetermined schedule. At each location, the unit will be activated to measure a 15-minute average time. The value obtained shall be noted on the Air Monitoring Report Form.

7.3 SAMPLING PARAMETERS AND ACTION LEVELS

7.3.1 Dust Monitoring

Real time dust monitoring will be conducted by the SHSO (or designated alternate) continuously during earthwork activities and as requested by the Trust's Representative. The SHSO (or designated alternate) will calculate the Time Weighted Average (TWA) at least twice per working day with the use of the hand-held dust monitor. The monitor will be used to measure total dust concentrations in the vicinity of the work activities and along the nearest downwind property boundary. One complete set of measurements will be made in the morning, followed by another set of measurements in the afternoon. At each location, a 15 minute-average reading will be obtained. The two 15 minute-average readings will be combined to estimate the eight hour TWA concentration. If the TWA exceeds 0.15 mg/m³ at the downwind property boundary or background level, whichever is greatest, or 5 mg/m³ in the immediate vicinity of the work, the SHSO (or designated alternate) will immediately notify the Trust's Representative and implement methods to reduce dust levels.

NOTE: The SHSO (or designated alternate) will collected background dust level data prior to beginning work activities. If the background dust readings area greater than the maximum allowable dust levels identified above, the background dust levels will be used as the maximum.

7.3.2 Organic Vapor Monitoring

The SHSO (or designated alternate) will collect background organic vapor level data prior to beginning excavation activities using the PID. The background reading will be taken in an area removed and upwind of the site. Real time monitoring will be conducted continuously during earthwork activities and as requested by the Trust's Representative.

The SHSO (or designated alternate) will calculate the TWA at least twice per working day with the PID. The PID will be used to measure organic vapor concentrations in the vicinity of the earthwork activities and along the nearest downwind property boundary. One complete set of measurements will be made in the morning, followed by another set of measurements in the afternoon. Monitoring also will be performed at the request of the Trust's Representative. At each location, a 15-minute average reading will be combined to estimate an eight-hour TWA concentration.

Action Levels:

- If organic vapor levels exceed 1 ppm above background readings, volatile organic compounds monitor the downwind perimeter of the work area continuously.
- If the ambient air concentration of organic vapors <u>exceeds 5 ppm above background</u> at the perimeter of the work area, implement measures to suppress the organic vapor concentrations and continue monitoring.

- If the organic vapor levels are greater that 5 ppm over background, but less than 25 ppm over background, at the perimeter of the work area, activities can continue provided the organic vapor level half the distance to the nearest residential or commercial structure is below 5 ppm over background.
 - If the organic vapor level is <u>above 25 ppm</u> at the perimeter of the work area, activities must be shut down. When work shutdown occurs, downwind air monitoring as directed by the SHSO will be implemented to ensure that vapor emission does not impact the nearest residential or commercial structure at levels exceeding those specified below.

If the total VOC action level (sustained reading of 25 ppm) is approached, the SHSO will evaluate the need for an upgrade in respiratory protection.

7.3.3 Community Air Monitoring

If any organic levels greater than 5 ppm over background are identified half the distance to the nearest residential or commercial property all work activities must be halted. If, following the cessation of the work activities, or as the result of an emergency, organic levels persist above 5 ppm over background at half the distance to the nearest residential or commercial property from the work area, then the air quality must be monitored within 20 feet of the perimeter of the nearest residential or commercial structure (20-Foot Zone).

(See Appendix C - Section 6)

If organic vapor levels are greater than 10 ppm above background:

- All Emergency Response Contacts as listed in Appendix 7 of this HASP and CP will go into effect. The local police authorities will immediately be contacted by the SHSO (or designated alternate) and advised of the situation.
- Frequent air monitoring will be conducted at 30-minute intervals within the 20-Foot Zone. If two successive readings below action levels are measured, air monitoring may be halted or modified by the SHSO.

7.3.4 Confined Space Entry Air Monitoring

If required, confined space entry air monitoring will be conducted as specified in Section 11.0 of this HASP.

7.4 DAILY SAMPLING RECORD

The SHSO (or designated alternate) will maintain a daily sampling record as part of the personnel air monitoring program (see Appendix 1 for sample Air Monitoring Report Form).

7.5 RECORD RETENTION

CODE will retain all personnel exposure sampling results in accordance with the requirements set forth in OSHA, Subpart C of 29 CFR 1910.20.

SECTION 8.0 Site Control Measures

8.1 BUDDY SYSTEM

Each field team member will be assigned a buddy. Field personnel will watch for hazards or problems his/her buddy might encounter. Buddies will pre-arrange hand signals or other means of emergency signals for communication when respiratory protection or distance makes communication difficult. Communication between buddies must be maintained at all times. Visual contact must be maintained between buddies. Further, buddies must remain in close proximity to each other in order to assist in case of emergencies.

8.2 SITE COMMUNICATIONS PLAN

For emergency situations when two-way radio communication is not available or practical, oral, hand, and semaphore safety signals have been established to protect project personnel. These signals will be made available to personnel for all phases of operation before going on-site. This will ensure quick communication during adverse or emergency situations.

Examples of established signals and their meanings are provided below.

<u>Signal</u> <u>Indicates</u>

Hand gripping throat

Out of air, can't breath

Wave hands over head from side-to-side

Attention: stand-by for next signal

Swing hand from direction of person receiving signal to directly overhead and through in a circle

Come here

Pointed finger on extended arm

Look in that direction

Grip partner's/buddy's wrist or both hands around wrist

Leave the area immediately

Hands on top of head Need assistance

Thumbs up OK, I'm alright, I understand

Thumbs down No, negative

Examples of audio signals include:

Short blast of airhorn Caution or look here

Four (4) blasts of airhorn Leave the area

8.3 WORK ZONE DEFINITION AND SITE ACCESS

CODE will safely guard all work, materials, equipment, and property from loss, theft, damage, and vandalism in accordance with it's Site Security Plan. CODE will safely guard the Trust's property and other private property from injury or loss in connection with the performance of the Contract. All on-site personnel and visitors will be required to sign-in and sign-out before entering or leaving the site (log provided in Appendix 1). Visitors will be required to the "HASP Acknowledgment & Visitor Sign-In Sheet" provided in Appendix 1 of this HASP prior to entering the site.

The Site will be divided into three major zones as follows.

- 1. The Exclusion Zone will encompass the areas of concern (AOCs), as well as any areas being utilized for the temporary storage of waste materials. The minimum level of protection in Exclusion will be modified Level D. Level C PPE will be utilized during hazardous soil excavation, tanker decontamination, and drum handling operations.
- 2. The Contamination Reduction Zone (CRZ) will be the transitional area between the identified "contaminated" and "clean" areas and shall provide for the transfer of equipment and materials from the Support Zone to the Exclusion Zone; the decontamination of personnel and clothing prior to entering the "clean" area; and the physical segregation of the "clean" and "contaminated" areas.

Equipment will be decontaminated before demobilization on the existing on-site decontamination pad. Any disposable, single-use sampling equipment will be collected and drummed after use on the Site as potentially hazardous waste. Non-disposable sampling equipment (e.g., split-spoon samplers, trowels, augers, etc.) will be decontaminated at portable decontamination stations adjacent to the exclusion zone, or at the on-site decontamination pad.

A boot wash facility(ies) will be provided for personnel decontamination.

Decontamination water will be collected for treatment in the existing on-site water treatment system.

3. The **Support Zone** will include a designated area adjacent to the Exclusion Zone. Personnel in the support zone will have immediate access to Level C PPE in order to respond to emergency situations in the Exclusion Zone.

The SHSO will be responsible for establishing, delineating, maintaining, and controlling access to the established work zones. All controlled work areas will be clearly laid out and delineated to prevent unauthorized access. Access to contaminated work areas shall be controlled by the SHSO (or designated alternate).

The SHSO will prepare a site plan showing the location of all work zones prior to site mobilization (see Appendix 3). The referenced diagram will be posted in prominent locations on-site throughout the duration of construction.

Unauthorized persons will not be permitted entry into controlled work areas.

8.4 NEAREST MEDICAL ASSISTANCE

The location of the nearest medical facility is provided in Appendix 7 of this HASP and CP. The name and

phone number of this facility and a map showing the fastest route to the facility must be posted on site.

8.5 SAFE WORK PROCEDURES

Site personnel shall observe the following safe work procedures at the project site.

- 1. Ensure that all safety equipment and protective clothing is kept clean and well maintained.
- 2. Ensure that all prescription eyeglasses in use on this project are safety glasses and are compatible with respirators. No contact lenses shall be allowed on site.
- 3. Ensure that all disposable or reusable gloves worn on the site are approved by the SHSO.
- 4. Change respirator filters during periods of prolonged respirator usage in contaminated areas. Respirator filters shall always be changed daily. Respirator cartridges should be changed out twice daily.
- 5. Cover footwear used on site by rubber overboots or booties when entering or working in the Exclusion Zone area or CRZ. Boots or booties shall be washed with water and detergents to remove dirt and contaminated sediment before leaving the Exclusion Zone or CRZ.
- 6. Decontaminate or dispose of all PPE used on site at the end of the work day. The SHSO shall be responsible for ensuring decontamination of PPE before reuse.
- 7. Individually assign all respirators and do not interchange them between workers without cleaning and sanitizing. Field personnel unable to pass a fit test as a result of facial hair or facial configuration shall not enter or work in an area that requires respiratory protection.
- 8. Ensure that all project personnel have vision or corrected vision to at least 20/40 in one eye.
- 9. On-site personnel found to be disregarding any provision of this HASP shall, at the request of the SHSO, be barred from the project.
- 10. Do not reuse disposable outerwear such as coveralls, gloves, and boots. Used disposable outerwear shall be removed upon leaving the hazardous work zone and shall be placed inside disposable containers provided for that purpose. These containers hall be stored at the site at the designated staging area and the Contractor shall be responsible for proper disposal of these materials at the completion of the project.
- 11. Immediately replace protective coveralls that become torn or badly soiled.
- 12. Prohibit eating, drinking, chewing gum or tobacco, and smoking in the Exclusion Zone and CRZ.
- 13. All personnel shall thoroughly cleanse their hands, face, and forearms and other exposed areas prior to eating, smoking, or drinking.
- 14. Workers who have worked in an Exclusion Zone shall shower at the completion of the work day.

- 15. All personnel shall wash their hands, face, and forearms before using toilet facilities.
- 16. Do not allow alcohol, firearms, or drugs (without prescriptions) on site at any time.
- 17. All personnel who are on medication should report it to the SHSO who shall make a determination whether or not the individual will be allowed to work and in what capacity. The SHSO may require a letter from the individual's personal physician stating what limitations (if any) the medication may impose on the individual.

The SHSO (or designated alternate) shall post the standard safety regulation notices provided in Appendix 4 of this HASP and CP in prominent locations on-site.

8.6 EMERGENCY ALARM PROCEDURE

Emergency escape routes will be designated by the SHSO for use in situations where rapid egress from the Exclusion Zone is required. The locations of these routes and the re-assembly area(s) will be indicated on the Site Lay-Out Plan (see Appendix 3). Site personnel will be notified of specific evacuation routes and re-assembly area(s) during the daily tool-box safety meetings.

An emergency evacuation alarm (air horn) will be kept on-site at all times. As indicated in Section 8.2 above, the audible evacuation signal to be used to shall be short bursts on the air horn (one second burst followed by one second interval of silence). The audible evacuation signal shall be repeated until the site is evacuated. After exiting the work area, personnel will meet at an upwind re-assembly area(s) designated by the SHSO. The emergency alarm will be sounded in the event of any serious problem or emergency (fire, medical, other) which requires the assistance of site personnel or the evacuation of the construction team.

In all situations when an on-site emergency results in evacuation of the Exclusion Zone, personnel will not be permitted to reenter until:

- The conditions resulting in the emergency have been corrected;
- · The hazards have been reassessed;
- This HASP and CP has been reviewed; and
- Site personnel have been briefed on any changes in the HASP and CP.

SECTION 9.0

Decontamination Procedures

Personnel and equipment decontamination procedures to be employed when exiting contaminated work areas at this project site are detailed in the following subsections.

9.1 PERSONNEL DECONTAMINATION

All personnel will be made aware of any personal habit that may allow contaminants into or onto the body. All personnel will check that regularly worn PPE (e.g., hard hats and liners, eye protection, etc.) is clean and in good condition. Any products for personal consumption or application are prohibited in any work area. Break area(s) will be limited to specific areas where eating, drinking, smoking, etc. and the storage of these materials will be allowed.

No PPE will be removed from a designated contaminated work area without proper decontamination or disposal. All personnel leaving the contaminated work area will pass through a contamination reduction zone (CRZ) where they will remove their PPE and thoroughly wash/rinse exposed skin with water and biodegradable soap before leaving the project site.

Poly sheeting will line the floor of the CRZ which will be equipped with spill collection pads and sausage booms. Three mason pans will be provided in the CRZ for personnel decontamination (triple-rinse procedure). The first pan will contain soap and water. The second and third pans will contain rinse water only. Used PPE will be placed in bags which will ultimately be secured with duct tape and placed in DOT approved drums for proper off-site disposal. Rinse water will collected for treatment in the on-site water treatment plant.

Personnel decontamination shall be as follows:

- Step 1: Place equipment and/or samples in area(s) designated in the Equipment Drop-Off Station.
- Step 2: Scrape gross contamination from boots and outer gloves, wash using soap in water solution, and rinse with water into a designated container in the CRZ
- Step 3: Remove tape from around boots and outer gloves (if worn) and deposit in collection drum. Remove overboots and outer gloves and place in collection drum.
- Step 4: Remove respiratory cartridges (if used) and place in collection drum.
- Step 5: Remove disposable coveralls and place in collection drum. Remove boots and store in appropriate location. Remove disposable inner gloves (if worn) and place in collection drum. Remove hard hat and safety glasses: decontaminate as necessary (wash with sanitizing solution [MSA sanitizing solution or equivalent], rinse with potable water, and allow to dry at the end of each day).
- Step 6: Remove respirator (if used) and deposit in plastic liner. Avoid touching face with fingers. Respirators shall be washed in a sanitizing solution (MSA sanitizer or equivalent), rinsed with potable water, and allowed to air dry at the end of each day.
- Step 7: Thoroughly wash/rinse exposed skin with water and biodegradable soap using mason pan number 1. Rinse in mason pan number 2. Rerinse in mason pan number 3. Shower and launder personal

clothing as soon as possible upon completing daily activities.

The personnel decontamination facility will be set up in the CRZ as described above. Personnel shall be required to dress down and drum their used PPE in the decontamination area in accordance with the above seven step procedure.

All materials generated during decontamination will be drummed for disposal in accordance with applicable local, state, and federal regulations.

9.2 EQUIPMENT DECONTAMINATION

Generally, equipment decontamination will be performed as follows:

- 1. Conduct gross removal of solids at point of use.
- 2. Degrease if necessary.
- 3. Move to the existing equipment decontamination pad decontamination via pressure washing.

The SHSO will be responsible for inspecting decontaminated equipment. The SHSO shall certify in writing (form to be provided in Formal Plan following Contract Award) that each piece of equipment utilized in the Exclusion Zone has been properly decontaminated.

Wastewater from the equipment decontamination will be contained for treatment in the on-site water treatment system.

SECTION 10.0

Site-Specific Operating Procedures & Accident Prevention Plan

10.1 STANDARD OPERATING PROCEDURES

10.1.1 Confined Space Entry

Section HASP, Section 11.0.

10.1.2 Lockout/Tagout Procedures

Circuits and equipment must be disconnected from all electric energy sources before work on them begins. Lockout and tagging devices is used to prevent the accidental re-energization of equipment.

De-energizing circuits and equipment. Disconnect the circuits and equipment to be worked on from all electric energy sources and release stored energy that could accidentally re-energize equipment.

Application of locks and tags. Only authorized employees are allowed to place a lock and tag on each disconnecting-means used to de-energize the circuits or equipment before work begins. The locks prevent unauthorized persons from re-energizing the equipment or circuits and the tags prohibit unauthorized operation of the disconnecting, device.

Verification of de-energized condition of circuits and equipment. Prior to work on the equipment, CODE requires that a "qualified" employee verify that the equipment is de-energized and cannot be restarted.

Re-energizing circuits and equipment. Before circuits or equipment are re-energized, the following steps must be taken in this order:

- · A "qualified" employee conducts tests and verifies that all tools and devices have been removed.
- · All exposed employees are warned to stay clear of circuits and equipment.
- · Authorized employees remove their own locks and tags.
- The SHSO (or designated alternate) conducts a visual inspection of the area to be sure all employees are clear of the circuits and equipment.

10.1.3 Electrical Grounding

Only qualified employees may work on or around electrical equipment on CODE job sites. CODE follows the standards set by OSHA and the National Electrical Code for the purchase and maintenance of electrical equipment and systems.

The working space around electrical equipment will be large enough to permit access to all parts of it, and it must never be used for the storage of other materials so that immediate access can be gained.

Only authorized electrical tools may be used on CODE job sites. Portable electrical tools must have grounding protection and be insulated against shock. Single-phase electrical tools must be approved by Underwriters Laboratories and must be plugged into properly grounded receptacles.

The use of extension cords is discouraged, and they may never be used in traffic areas where they may be a hazard or where they may come unplugged. They must always be grounded. Any energized electrical equipment operating at 50 volts or higher must be protected by a cabinet or other approved enclosure, with warning signs immediately visible.

10.1.4 Excavation Safety

CODE maintains strict safety procedures for soil excavation projects. The safety of all employees during these operations depends on the soil structure and stability, weather conditions, buried utilities and structures, and superimposed loads.

If an area of soil to be excavated is wet or sandy, or has been backfilled at any time, it is likely to be very unstable. Employees must be cautious under these conditions and provide extra sloping if possible.

A change in weather conditions (such as heavy rain or snow) can loosen the soil and increase the risk of collapse. If an area to be excavated is prone to collapse, precautions (such as covering the area) should be taken. Heavy equipment or materials should be kept as far away as possible from an area to be excavated because they can also increase the risk of collapse. All excavated soil should be removed from the rim of the area and contained if at all possible.

10.1.4.1 Hidden Precautions

Before any excavation may begin, CODE requires that all local utility companies be notified in order to locate any hidden pipelines or cables. If any such hazards exist, they will be carefully marked prior to the start of excavation.

Any excavations which are deeper than five feet and into which employees must enter will be sloped, shored or somehow contained to protect the employees from collapsing soil. When employees are required to work in depths of more than four feet, a ladder must be provided and will not be removed until all employees have exited the excavation site.

All excavation sites will be inspected for proper precautions and all activity will cease if the Job Superintendent, Project Manager, SHSO and/or the Project Health and Safety Manager deem the site hazardous. A competent person must make daily inspections of any excavation employees enter.

10.1.4.2 Exterior Precautions

To protect the health and safety of all employees, CODE requires that all exterior structures (such as sidewalks or bridgeworks) be protected and clear of excavated materials. Sidewalks will be shored to carry a load of at least 125 pounds/square foot. Planks used for temporary walkways will be laid parallel to the length of the

walkway and will be fastened together.

If at all possible, guard rails or fences will be erected to protect employees and vehicle traffic from the edge of excavation sites.

10.1.4.3 Lock Out/Tag Out Policy

When excavation activity ceases either for repairs, at the end of a shift or at the end of a day, all equipment will be removed from service by either being locked out or tagged out. This procedure ensures the health and safety of all employees by deactivating any movable, electrical or pressurized equipment.

This policy applies to all machinery or equipment that can be moved either by the use of electrical power, hydraulic power, compressed air, steam, energy stored in springs or suspension devices. Danger tags will also be placed on all movable equipment or machinery.

Only those employees authorized to lock out or tag out may do so, or his or her supervisor may do so. Each employee is responsible for his or her own equipment and no one else is permitted to remove a lock or tag except the authorized employee or his or her supervisor. Any violation of this policy is cause for severed disciplinary action.

10.1.4.4 System Repair and Maintenance

Before any repair or maintenance work may be done on either electrical or pressurized equipment, CODE requires that it be done only by authorized and trained employees. Any work done on these types of equipment may not be done until all lock out or tag out procedures have been completed to the satisfaction of the RSS/SSO.

10.2 ACCIDENT PREVENTION PLAN

10.2.1 Safety Meeting

Daily tailgate meetings will be conducted as stated in Section 4.1 of this HASP.

10.2.2 Fire Prevention And Protection

The following guidelines apply:

- A fire emergency program will be in effect at all times throughout all phases of construction. It will include fire-fighting equipment, alarm systems, the location of the closest fire departments and procedures for handling fire emergencies.
- All fire-fighting equipment will be inspected on a regular basis, maintained in proper working condition, and will be located in an accessible place at all times. All employees will be notified of their location and procedures will be reviewed on a regular basis.
- A fire extinguisher, rated not less than 2A, will be provided for each 3,000 square feet of a protected building area, or major fraction thereof, on every floor, and they will be placed no more than

100 feet from any point within the building. Fire extinguishers will be placed adjacent to stairways in multi-story buildings. Carbon tetrachloride and other toxic vaporizing liquid fire extinguishers are not permitted.

10.2.3 Walking and Working Surfaces

The following guidelines apply:

- 1. Floor openings will be guarded on all exposed sides by a standard railing and toeboards or cover.
- Every open-sided floor or platform that is 6 or more feet above adjacent floor or ground level will be guarded by a standard railing on all open sides.
- Runways 4 or more feet high will have standard railings on all open sides, unless operating conditions prohibit it.
- 4. Temporary floor openings will have standard railings, or a temporary cover.

10.2.4 Site Housekeeping

The following guidelines apply:

All excess material and debris will be kept clear from all working areas.

- Combustible materials will be removed at regular intervals, and all wastes will be properly disposed of at frequent intervals.
- Containers will be provided for the collection and separation of all discarded materials and refuse, and covers and identification will be provided for containers used for flammable or harmful substances.

10.2.5 Mechanical Equipment Inspection And Operation

The following general guidelines apply:

- All vehicles and equipment to be used on a project must be checked at the beginning of each shift to assure that all parts that affect safe operation are in proper working condition and that they are free from defects.
- No employee will be permitted to use any vehicle or equipment that has an obstructed view to the rear unless there is a reverse signal alarm or a signal man is assigned to assist.

Employees may not work or walk under or between equipment that has parts which are suspended

or held aloft unless or until the parts are substantially blocked to prevent their falling or shifting.

10.2.5.1 High-Pressure Washers

CODE requires that only trained and authorized employees may operate high-pressure washers on a job site. This policy is intended to protect both CODE employees and any property where the equipment is to be used. The following guidelines are offered:

The lance must always be pointed at the specific work area.

All other employees must remain at least 25 feet away from the washer and the structure to be washed.

- c. Special care should be taken to ensure the proper footing of the operator.
- d. The operator and his assistant must wear the following personal protective equipment:
 - > Hard hat with face shield
 - ➢ Goggles
 - > Safety boots with metal foot and shin guards Hearing protection
 - > PVC rain or acid suit
 - > Heavy gloves
 - > Any additional equipment to protect against chemicals, as needed.
- e. Operators will be rotated on at least an hourly basis.
- f. Training in emergency shut down procedures and general equipment maintenance is required of all operators and assistants.
- g. Under no circumstances will an operator be allowed to make modifications to a power washer while on a job.

10.2.5.2 Vehicle and Equipment Safety

Only fully trained and qualified employees may operate construction equipment and vehicles on an CODE job site. This policy is intended to protect all employees and client properties and is in effect at all times.

The safety guidelines of this policy include:

- Every unit is to be inspected prior to its use on a project site and then inspected periodically depending upon the equipment involved and the manufacturer's specifications.
- No repair work or refueling may be done while vehicles or equipment are in operation. The engine is to be turned off and all buckets, blades, gates or booms lowered to the ground or substantial support.

- Back up alarms must be operational and audible over surrounding noise levels. If not, an assistant will be required to clear the way.
- Only authorized employees are permitted to ride in company vehicles or equipment. Under no circumstances will an employee be permitted to either get on or get off a moving vehicle.
- · Operators of equipment must wear the following personal protective equipment:
 - > Boots or sturdy work shoes,
 - Ear protection devices when the noise level is expected to be in excess of 90 DBA,
 - > Heavy work gloves, and
 - ➤ Hard hat.
- Vehicles and equipment not in use will be parked off roads and major access routes with their wheels blocked. They will be turned off and the keys given to the appropriate supervisor on the site.
- If an unit is equipped with seat belts, the operator and any assistants must wear the seat belts at all times.
- All windshields, side windows, mirrors and lights will be cleaned as often as necessary to ensure proper visibility.

10.2.5.2.1 Trucks

The following guidelines apply to operators of CODE trucks:

- a. A current driver's license must be carried at all times.
- b. No truck will be filled with material while the driver is in the cab.

The driver must check the loaded material to ensure against material loss or shifting during transit.

- d. All DOT regulations must be followed.
- e. Safety chains must be used when towing trailers.

10.2.5.2.2 Heavy Equipment

CODE has the following guidelines for the operation of front-end loaders, scrapers, dozers and tractors:

Prior to their use on a site, every piece of equipment's brakes, cables and hoses must be checked and

they must be in good working order.

When moving, all blades, buckets or bowls must be close to the ground but high enough to avoid any obstacles on the ground. When not in motion, they must be lowered to the ground or to a substantial support.

Under no circumstances will an employee be permitted to ride on a boom, bucket, bowl or other extension.

All safety equipment must be properly installed and in good working order before a piece of equipment may be put into use on an CODE job site.

10.2.6 Sanitation

With the exception of mobile crews having transportation readily available, all work sites will have toilets provided according to the following requirements: One toilet for 20 or fewer employees; one toilet seat and one urinal per 40 employees; For 200 or more employees, one toilet seat and one urinal per 50 workers. Adequate washing facilities will be provided on any site where there are harmful substances, and they will be in close proximity to the site. An adequate supply of potable water will be provided on all sites, and it will be clearly marked as such. Portable water containers will have tightly sealed tops and must have a tap.

10.2.7 Daily Safety Inspections

The SHSO (or his designated alternate) will monitor job-site safety via inspection at the start and completion of each day's work as well as monitoring the job site for this purpose throughout the day. Results of the daily safety inspections will be recorded on the Daily Safety Log (see Appendix 1).

Any safety violations shall be corrected and reported to the Project Health and Safety Manager. All observed safety violations will be immediately corrected, explained to the perpetrator, and reviewed at the next safety meeting. Excessive violations of the site safety rules will be grounds for disciplinary action which could lead to termination of the CODE's personnel and expulsion of vendor or subcontractor personnel from the site.

10.2.8 Accident Reporting

The following guidelines apply:

- 1. The company will maintain an OSHA Form No. 200 of all recordable occupational injuries and illnesses, and will do so within six working days after receiving the information.
- 2. The company will maintain an OSHA Form No. 101 and have it available for inspection.
- 3. The company will post an annual summary of all occupational injuries and illnesses for each site, and it will remain posted from February 1 until March 1.
- 4. All records and OSHA forms will be maintained by the company for a period of at least five years following the end of the year to which they relate, and they will be made available, upon request, to

authorized personnel.

5. Any occupational accident which results in the death of one or more employees or the hospitalization of five or more employees will be reported by the company to the nearest OSHA Area Director within 48 hours of its occurrence.

SECTION 11.0 Confined Space Entry Operations

The following guidelines outline the minimum acceptable criteria to be utilized for all confined space entry. All projects requiring confined space entry must be reviewed thoroughly by the Health and Safety Officer.

Personnel entering and working in confined spaces will be required to adhere to the OSHA Permit-Required Confined Space Standard 29 CFR 1910.146 (Publications 58-FR-4549 and 58-FR-34845); the OSHA Construction Standard 1926.21 (B)(6); and the OSHA General Duty Clause. Personnel are instructed in these OSHA regulations as part of the CODE's employee training program (see HASP Section 4.0).

The SHSO will be responsible for reviewing applicable OSHA protocol with the field team prior to confined space entry.

11.1 **DEFINITION**

11.1.1 Confined Space

OSHA defines a confined space as having the following characteristics:

The space is large enough that it can be bodily entered; The space has restricted means of entry and exit; and The space is not designed for continuous human occupancy.

Examples of confined spaces include tanks, underground vaults, manholes, and excavations greater than four feet deep. There are two types of confined spaces: permit-required and non-permit required. The "PRCS Evaluation Procedures and Decision Flow Chart" provided as Figure 1 at the end of this section shall be used to evaluate the potential for permit-required confined spaces.

11.1.2 Permit-Required Confined Space (PRCS)

OSHA defines a permit-required confined space (PRCS) as have one or more of the following hazards:

- The space contains, or has the potential to contain, a hazardous atmosphere. A hazardous atmosphere is defined as oxygen below 19.5% or above 23.5%, combustible vapors above 10% LEL, or high toxic concentrations which may cause death, incapacitation, or an impaired ability to self-rescue.
- The space contains a material that may engulf an entrant.
- The space has an internal configuration that may trap or asphyxiate entrants.
- The space contains any other serious health and safety hazard.

All PRCSs shall be identified with a sign reading:

DANGER PERMIT-REQUIRED CONFINED SPACE DO NOT ENTER

The above sign will be prominently posted on-site by the RSS/SSO in the immediate vicinity of the PRCS to inform personnel of the existence and location of, and the danger posed by, the PRCS.

Entry into a PRCS requires special training, rescue procedures, and a confined space entry permit.

11.1.3 Non-Permit Required Confined Space

OSHA defines a non-permit required confined space as a PRCS in which all serious hazards have been eliminated. Non-permit required confined spaces shall be reevaluated by the SHSO using the "PRCS Evaluation Procedures and Decision Flow Chart" (Figure 1) whenever they or their characteristics change in a way that could lead to reclassification as a PRCS.

11.2 PERSONNEL RESPONSIBILITIES

11.2.1 Entry Supervisors

CODE will designate an entry supervisor to oversee confined space entry and ensure that all personnel engaged in PRCS entry operations comply with this procedure. Entry supervisors shall:

Verify that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

Terminate the entry and cancel the permit when the entry operations covered by the entry permit have been completed or whenever a condition that is not allowed under the entry permit arises in or near the PRCS.

Verify that rescue services are available and that the means for summoning them are operable.

Remove unauthorized individuals who enter or who attempt to entry the PRCS during entry operations.

Determine (at intervals dictated by the hazards and operations performed within the PRCS and whenever responsibility for a PRCS entry operation is transferred) that entry operations are consistent with terms of the entry permit and that acceptable entry conditions are maintained.

11.2.2 Attendants

The Entry Supervisor designate a qualified attendant for each PRCS entry operation. To be qualified, an attendant must know the hazards that authorized entrants may encounter during entry (including information on the mode, signs and symptoms, and consequences of exposure) and must be aware of behavioral effects (symptoms) of hazard exposure.

Attendants shall:

- 1. Remain outside the PRCS during entry operations until relieved by another attendant.
- 2. Take action:
 - a. Warn that unauthorized entrants that they must stay away from the PRCS or that they must immediately exit if they have entered the PRCS; and
 - b. Inform authorized persons and the Entry Supervisor if unauthorized persons have entered the PRCS
- Continuously maintain an accurate count of authorized entrants in the PRCS and ensure that the means used to identify authorized entrants accurately identify the entrants.
- Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the PRCS.
- Monitor activities inside and outside the PRCS to determine if it is safe for entrants to remain in the PRCS.
- Immediately order evacuation of the PRCS if the attendant detects a prohibited condition, the behavioral effects of hazard exposure in an authorized entrant, or a situation outside the PRCS that could endanger the authorized entrants, or if the attendant cannot effectively and safely perform any of his or her duties and responsibilities.
- Perform non-entry rescues as specified by the Confined Space Entry Permit; summon rescue and other emergency services as soon as it is determined that authorized entrants may need assistance to escape from PRCS hazards.

Attendants shall NOT, under any circumstances:

- Monitor more than one occupied PRCS at any given time;
- Perform any duty that might interfere with their primary duty to monitor and protect the authorized entrants; or
- > Enter into the PRCS for rescue purposes.

11.2.3 Authorized Entrants

Authorized PRCS entrants shall be identified on each Confined Space Entry Permit. Authorized entrants shall:

Know the hazards, including information on the mode, signs or symptoms, and consequences

of exposure.

- Properly use PPE provided for PRCS entry.
- Communicate with the attendant as necessary so the attendant can monitor entrant status and alert entrants of any need to evacuate the PRCS.
- Evacuate the PRCS and alert the attendant whenever they recognize any warning sign or symptom of exposure to a dangerous situation or they detect a prohibited condition or whenever the attendant or entry supervisor orders evacuation or an evacuation alarm is activated.

11.3 TRAINING

All employees shall be instructed not to enter PRCSs without the proper permit and without following the procedures and practices outlined in this SOP and the Confined Space Entry Permit. Employees who are required to enter PRCSs or act as an attendant or entry supervisor shall be trained to acquire the understanding, knowledge, and skills necessary for the safe performance of their assigned responsibilities and duties. These employees also must be familiar with the kinds of hazards they might face during entry and understand the modes, signs and symptoms, and consequences of exposure.

Entrants will receive training on:

The methods use to communicate with attendants and the means attendants will use to notify them of emergencies;

The operation of any specialized equipment they are expected to use, including monitoring and rescue equipment; and

Evacuation signals and procedures and the need for entrants to notify the attendant and evacuate the PRCS if they detect any dangerous condition.

Attendants will receive training on:

Procedures for monitoring inside and outside the PRCS and in recognizing conditions that might be hazardous to entrants;

Procedures for communicating with entrants;

Procedures for evacuating entrants from the PRCS and under what conditions evacuation is required;

Procedures for controlling access to the PRCS and to warn unauthorized people away from the space;

Their responsibility to remain outside the PRCS during entry, unless they are relieved by another attendant; and

Non-entry rescue procedures.

Entry Supervisors will receive training on:

Verifying that the Confined Space Entry Permit has been completed properly;

Procedures for verifying that all tests specified by the permit have been conducted;

Requirements for verifying that all procedures and equipment specified by the permit are in place before allowing entry to begin;

Procedures for determining if conditions are acceptable for entry;

Authorizing entry operations; and

Terminating entry.

The above training will be conducted:

Before the employee is first assigned confined space duties (initial training);

Before a change in assigned duties;

Whenever there is a change in permit space operations that presents a hazard about which an employee has not previously been trained; and

Whenever project management, involved regulatory officials, or the Trust's Representative has reason to believe that are inadequacies in knowledge or use of these procedures.

When complete, training will be certified by the instructor. The certification will list the names of the personnel presenting and receiving the training and the dates of training. Training certification documentation shall be maintained as part of the project file and in individual personnel files in the home office.

11.4 PRCS ENTRY PROCEDURE

11.4.1 Atmospheric Testing

Before an employee enters any confined space, the Entry Supervisor will test the internal atmosphere with a calibrated, direct-reading instrument to determine if acceptable entry conditions exist for the following conditions in the order given:

Condition

Acceptable Parameter(s)

Oxygen Content Flammable Gases and Vapors Potential Toxic Air Contaminants Above 19.5% and Below 23.5%

Less than 10% LEL

Below Action Levels for Selected PPE

Continuous systems which cannot be isolated (i.e., sewers) or activities which (generate significant airborne contaminants (i.e., welding) will be continuously monitored during entry unless forced mechanical ventilation is used and has been shown to maintain an acceptable atmosphere.

11.4.2 PRCS Entry

The SHSO will utilize the "PRCS Evaluation Procedures and Decision Flow Chart" (Figure 1) to verify the presence of a PRSC. If it is determined that a PRSC does exist, the SHSO will review confined space entry procedures with entry personnel; post OSHA-required danger signs at entrances to the PRCS(s) and notify site personnel of PRCS locations; notify off-site rescue/emergency response services of the required PRCS(s); and prepare a Confined Space Entry Permit.

11.4.2.1 Hazard Elimination or Control

The SHSO will determine if hazards can be controlled with continuous forced mechanical ventilation or eliminated by removing potential sources of air contaminants, using proper shoring or sloping, installing standard guardrails, locking out electrical systems, etc. If potential hazards can be eliminated, then the PRCS may be reclassified as a non-permit confined space. If potential hazardous are controlled with continuous forced mechanical ventilation, then the Non-PRCS Entry Procedure provided in Section 11.5 of this HASP can be used.

11.4.2.2 Confined Space Entry Permit

The Entry Supervisor will be responsible for completing the Confined Space Entry Permit (sample provided in Attachment E of this HASP). All items on the permit MUST be completed. The Entry Supervisor MUST verify that all entry personnel are aware of the specific hazards associated with the PRCS; that all necessary safety equipment and materials are in place; that emergency response procedures are in place; and that pre-entry air monitoring results indicate acceptable entry conditions before signing the permit.

NOTE: Only one permit at a time may be used for PRCS entry.

11.4.2.3 Pre-Entry Briefing

The Entry Supervisor will conduct a pre-entry briefing with attendants and authorized entrants to discuss the requirements of the permit and ensure that all involved personnel understand their responsibilities and the specific hazards associated with the PRCS. A pre-entry briefing will be conducted once for each attendant and authorized entrant prior to entry and whenever new hazards are identified.

11.4.2.4 Entry Authorization

The Entry Supervisor will sign the Confined Space Permit AFTER the permit has been completed, safety equipment is in place, air monitoring results are acceptable, the pre-entry briefing has been conducted, and rescue procedures have been established.

Once the permit has been signed:

Entrants will don all necessary safety and rescue equipment; The permit will be posted at, or near, the PRCS entrance; and Entry will begin.

11.4.2.5 Confined Space Entry Permit Expiration and Cancellation

Each Confined Space Entry Permit will be valid for only one (1) shift. Permits will be canceled if:

A new hazard is identified or encountered;

An entrant is seriously injured and requires evacuation and/or rescue; or if

A change in the Scope of Work requires new activities which may create previously unanticipated hazards that may cause serious injury or death.

Expired and canceled permits must be returned to the Site Superintendent who will file and maintain them with the project documents. Reissuance of expired or canceled permits will be as specified in of this SOP.

11.5 NON-PRCS ENTRY PROCEDURE

The following procedure may be utilized only if the following conditions have been met:

The only serious hazard that cannot be eliminated is an actual or potential hazardous atmosphere;

Continuous forced ventilation along is sufficient to prevent a hazardous atmosphere; and

Monitoring data is available to support the adequacy of ventilation.

If the conditions of this non-PRCS entry procedure can be met, then the entry permit, attendant, and rescue procedures specified in this SOP are not required, however, it is necessary to complete a Confined Space Entry Permit prior to entry. The permit will document that the space has been classified as a non-PRCS. AIR MONITORING IS REQUIRED DURING NON-PRCS ENTRY.

All non-PRCS entrants will be required to have completed PRCS training, comply with all other applicable site safety regulations, and adhere to the following procedure:

Eliminate conditions making it unsafe to remove an entrance cover prior to removing the cover (i.e., use non-sparking tools);

Setup barriers around the opening to prevent adjacent work activities from endangering entrants;

Conduct pre-entry air monitoring per this SOP.

Setup forced mechanical ventilation if a hazardous atmosphere is encountered or anticipated. Continue ventilation for as long as entrants are in the space.

Evacuate entrants if a hazardous atmosphere develops and implement corrective actions to prevent recurrence.

Check the Non-PRCS box on the Confined Space Entry Permit and document the following: date of entry, location of the space, description of the work to be conducted within the space, and pre-entry air monitoring results. The person authorizing the Non-PRCS procedure will sign the permit in the space provided.

11.6 RESCUE/EMERGENCY RESPONSE

11.6.1 On-Site Rescue/Emergency Response Teams

Each member of the on-site rescue/emergency response teams shall:

Be provided with, and trained in the proper use of, PPE and equipment necessary for making rescues from PRCSs;

Practice making PRCS rescues at least once every 12 months. Practice drills shall simulate emergencies and rescue operations and shall involve the removal of dummies, manikins, or persons from simulated PRCSs. The simulated PRCS shall mock the configurations and hazards of the PRCS from which rescue is to be performed.

Each member of the on-site rescue/emergency response team also shall receive the same level of training as authorized entrants and shall be trained in basic first-aid and CPR. Provisions shall be made so that whenever the team is on call, at least two members of the team will have current certification in first aid and CPR.

11.6.2 Off-Site Rescue and Emergency Services

Off-site rescue/emergency service personnel will be informed by the SHSO, or his designated on-site representative, of the hazards they may confront when called on to the job-site to perform rescues. The rescue/emergency service personnel will be provided access to all permit spaces from which rescue may be necessary so that the emergency responders can develop appropriate rescue plans and conduct rescue operations.

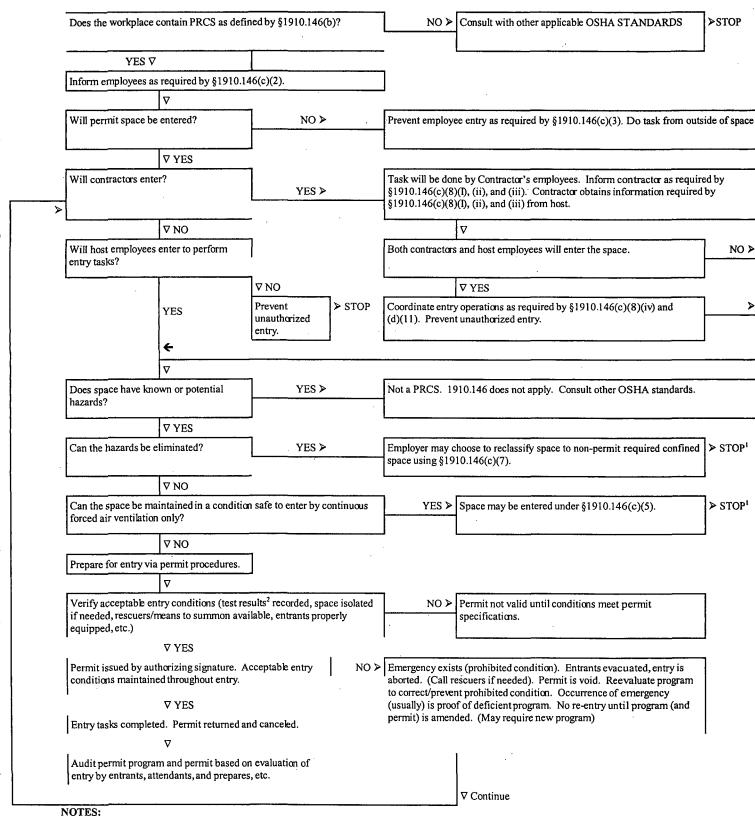
11.6.3 Non-Entry Rescue Procedures

To facility non-entry rescues, retrieval systems or methods will be used whenever an authorized entrant enters a PRCS, unless the retrieval equipment would increase the overall risk of entry or would not contribute to the rescue of the entrant.

Each authorized entrant will use a chest or full body harness, with a retrieval line attached at the center of the entrant's back near the should level or above the entrant's head (wristlets may be used in lieu of the chest or full body harness if the it can be demonstrated that the use of such a harness is infeasible or creates a greater hazard and that the use of wristlets is the safest and most effective alternative).

Retrieval lines will be attached to a mechanical device or fixed point outside the permit space in such a manner that rescues can begin as soon as the rescuer becomes aware that rescue is necessary. The mechanical device will be ready to retrieve personnel from vertical PRCSs more than five feet (5 ft) deep.

FIGURE 1 PRCS Evaluation Procedures and Decision Flow Chart



^{1.} Spaces may have to be evacuated and re-evaluated if hazards arise during entry.

Test conditions in the permit space to determine if acceptable entry conditions exist before entry is authorized to begin. If isolation of the space is feasible because the space is large or is part of a continuous system (e.g. sewer system), pre-entry testing will be performed to the extent feasible before entry is authorized. If entry is authorized, entry conditions will be continuously monitored in the areas where authorized entrants are working. Test or monitor the permit space as necessary to determine if acceptable entry conditions are maintained during entry operations. The space will be tested first for oxygen, then for combustible gases and vapors, and then for toxic gases and vapors.

SECTION 12.0 Logs, Reports, and Record Keeping

The following health and safety reports will be prepared and submitted as indicated below.

Type	Frequency
Daily Safety Report	Daily
Employee Meeting Record	As Needed; One Per Meeting
Exclusion Zone Log	Daily
Site Log	Daily
Confined Space Entry Permit	As Needed; One Per Entry
Air Monitoring Report	Daily
Accident/Incident Report	As Needed; Within 24 Hours
Health & Safety Inspection Report	As Needed; One Per Inspection
Spill Report	As Needed; Within 24 Hours
Equipment Decontamination Verification Form	As Needed
Close-Out Safety Report	During Contract Close-Out,
	Following Demobilization

Copies of the field logs, permits, and forms required for this project are provided in Appendix 1.

The above logs and reports shall be prepared by the SHSO or his designated representative at the frequency noted above. Completed logs and reports shall be provided to the Trust's Representative in accordance with the schedule set forth in the Specifications and previous sections of this HASP and CP.

APPENDIX 1
Health & Safety Report Forms

Code Environmental Services, Inc. DAILY SAFETY REPORT			
	al Work Element I, Soils	Date:	
		Conditions	
	A.M.	· · · · · · · · · · · · · · · · · · ·	Y1/A
	A.M. P.M.	Rain/Snowfall: oF (Minimum)	_ Inches (Approx.) °F (Maximum)
Scheduled Work Activity	ies		
Personnel	Activity	PPE	Equipment
The state of the s	and the second s	**************************************	h Lagrande (h. 1919). Esta de la Proposition de la companya de la
			·
Noticed Deficiencies/Con	rrective Action		
Deficiency	Corrective Action	Date Corrected	Time Corrected
	1.1 1 1.2 2.2 2.2 2.2 2.2 2.2 2.2 2.2 2.	A. Maria	
	-		
Accidents/Incidents/Illnesses: (Briefly Describe and Complete In Full Incident Report Form For Submittal to the Health & Safety Officer.)			
Miscellaneous Commo	ents:		
Report Completed By	:		•
(Printed Name/Title)		(Signature)	

Code Environmental Services EMPLOYEE MEETING RE		
Project Information:		
Project Name: Remedial Work Ele Site Name: Chemsol, Inc. Super		0.:
Meeting Information:		
Meeting Date:	Instructor:	
Start Time:		
Materials Covered:		
Name of Person Attending	Social Security Number	Signature
a control parties processors to a control to the co		Carachagair ann an Aireann an Aireann an Aireann ann an Aireann ann an Aireann an Aireann an Aireann an Airean
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Instructor Signature:		Date:	
	· ·		

HEALTH AND SAFETY PLAN & CONTINGENCY PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

HASP ACKNOWLEDGMENT/VISITOR SIGN-IN SHEET

All persons wishing to gain entry to the project site are required to acknowledge their understanding of this HASP.

I have read (or reviewed with the SHSO) the Site-Specific Health and Safety Plan and Contingency Plan for the Chemsol, Inc. Superfund Site Remedial Work Element I, Soils Project and understand its provisions for my health and safety.

and understand its provisions for my health and safety.					
PRINTED NAME	SIGNATURE	COMPANY	DATE		
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·					
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I have read (or reviewed with the SHSO) the Site-Specific Health and Safety Plan and Contingency Plan for the Chemsol, Inc. Superfund Site Remedial Work Element I, Soils Project and understand its provisions for my health and safety.

PRINTED NAME	SIGNATURE	COMPANY	DATE

Code Environmental Services, Inc. **EXCLUSION ZONE LOG** Date: Work Area: Project Name: Remedial Work Element I, Soils Contract No.: Chemsol, Inc. Superfund Site Site Name: CODE Job No.: All persons working within the Exclusion Zone must record enter/exit times for each entry made. Name (Please Print) Time In Time Out ☐ AM ☐ PM ☐ AM ☐ PM \square AM \square PM \square AM \square PM □ AM □ PM □ AM □ PM \square AM \square PM \square AM \square PM ☐ AM ☐ PM □ AM □ PM \square AM \square PM ☐ AM ☐ PM ☐ AM ☐ PM \square AM \square PM \square AM \square PM \square AM \square PM ☐ AM ☐ PM □ AM □ PM □ AM □ PM \square AM \square PM \square AM \square PM ☐ AM ☐ PM \square AM \square PM \square AM \square PM \square AM \square PM \square AM \square PM ☐ AM ☐ PM □ AM □ PM □ AM □ PM \square AM \square PM SHSO Signature: ____ Date: _

	Code Environmental Services, Inc. SITE LOG Project Name: Remedial Work Element I, Soils Contract No.: Site Name: Chemsol, Inc. Superfund Site CODE Job No.:			
Date	Name	Company	Purpose for Visit	Entry/Exit Times
				AM □ PN
				AM □ PN
				AM □ PN
				AM □ PN
				AM □ PN
				AM □ PN
				AM □ PN
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Date: Project Name: Remedial Work Element I, Soils Site Name: Chemsol, Inc. Superfund Site		Page1 _ Of2		
Instrument Calibration	1			
Instrument	Calibrated By:	Date	Time(5)
			AM 🗆 PM _	
	·		AM 🗆 PM _	 AM _ P M
			AM 🗆 PM _	D AM D PM
			AM 🗆 PM _	
			AM 🗆 PM _	
			AM 🗆 PM	
Perimeter Samples Collecte	mpling d:			
Perimeter Samples Collecte Perimeter and Personnel Sa Date on Which Sample Wa	d:	ious Days (P		eived, Indicate
Perimeter and Personnel Sa Date on Which Sample Wa Meteorological Data	mple Results from Previs Collected):			
Perimeter and Personnel Sa Date on Which Sample Wa Meteorological Data Temperature:°F	mple Results from Previous Collected): Wind Direction:		Humidity:	
Perimeter and Personnel Sa Date on Which Sample Wa Meteorological Data Temperature:°F Weather Condition (i.e., Gu	mple Results from Previs Collected): Wind Direction:	Etc.):	Humidity:	
Perimeter and Personnel Sa Date on Which Sample Was Meteorological Data Temperature:°F Weather Condition (i.e., Gu	mple Results from Previs Collected): Wind Direction:	Etc.):	Humidity:	

	Remedial Work I Chemsol, Inc. Su		oils C	Page 2 Of 2 Contract No.: CODE Job No.:	
Operation Monitored: (If instruments have recorders, attach tape to report. Note when action levels are exceeded. Indicate response taken.)					
Instrument	Sampling Location	Sample Time	Reading	Action Level Exceeded?	Action(s) Taken
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
	,			☐ Yes ☐ No	
			·	☐ Yes ☐ No	
			· · · · · · · · · · · · · · · · · · ·	☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	·
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				☐ Yes ☐ No	
		·		☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
				☐ Yes ☐ No	
Report Prepared	By:		•		

Code Environmental Services, Inc. SPILL REPORT FORM

	SPILI	L REPORT FORM	<u> </u>
	ct Name: <u>Remedial Work Element I, Soils</u> Name: <u>Chemsol, Inc. Superfund Site</u>	Contract No.:CODE Job No.:	
TYPI	E OF SPILL:		
1.	☐ Priority 1 (Significant) ☐ Priority	2 (< 5 Gallons)	·
2.	Date of Spill:/	•	÷
3.	Time:	•	
4.	Estimated Amount of Spill:		
5.	Type of Material:		
6.	Location:		
7.	Identify Potential Impacts:		
8.	Cause of Spill:		
		· .	
9.	Method of Containment and Clean-up M	1easures Taken (Describe):	
-			
10.	Contacts Made (If Priority 1):		•
	State:		
	Police:		
	Other:	*	
11.	Other Preventative Measures Taken:		
REP	ORT PREPARED BY:		
Print	ed Name, Title Signature		
	Environmental Services, Inc.		
Code	Environmental Scivices, Hic.	•	

Code Environmental Services, Inc. EQUIPMENT DECONTAMINATION VERIFICATION FORM

lite Name:	
	Chemsol, Inc. Superfund Site CODE Job No.:
. I hereb	by certify that on this the day of, 200, I have ted and found the following equipment to be properly decontaminated:
	<u> </u>
	<u> </u>
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
	
the at	pove-listed equipment is therefore released from the project site.
COMMENT	S:
	·
•	
CERTIFICA	TION:
Printed Name	, Site Health & Safety Officer Signature

Code Environmental Services, Inc. **CONFINED SPACE ENTRY PERMIT** Date _____ Shift ____ Job No.: ____ Site Name.: Chemsol Confined Space Description Type of Work Planned **TESTS PERFORMED** LEL Oxygen **VOCs** Dust Other Other (mg/m^3) Time (%) (%) (ppm) CHECK ONE **CHECKLIST** YES NO Lines to and from Confined Space Disconnected 000000000000 Electrical Service Disconnected or Locked out Grounding and Bonding Cables in Place Lighting, Fittings and Cords Approved Ground Fault Circuit Indicator on Ignition Sources Isolated Respiratory Equipment Checked Safety Harnesses and Lifelines Checked Protective Equipment Checked Employees Trained in PPE Support Person Trained Leaded Products Present **Emergency Equipment Checked** Warning Signs Visible Ventilation System in Effect PERSONAL PROTECTIVE EQUIPMENT NEEDED CHECK ALL THAT APPLY Chemical Goggles Heavy Suit Safety Glasses Saranex Suit Face Shield Tyvek suit Gloves Airline Respirator Cartridge Type Airline w/ Egress Boots Hearing Protection Lifeline with Harness

Code Environmental Services, Inc. CONFINED SPACE DOCUMENTATION

Use the space below to draw a diagram of the confined space. Be sure to indicate the location of manways and ventilation sources, and where monitoring tests were performed.

	View from Top	N	View from Side	
W				E
This lo	g is valid only for this one shift and for	S the fo	llowing authorized entrants:	
		. : -		
		_		
		_		
The fo	llowing attendants have been assigned:	<u> </u>		
		_		
Entry S	Supervisor's Name (Printed):			·
Superv	visor's Signature		Date	
Projec	t Name		Shift Time	

APPENDIX 2 Key Personnel Qualifications

RICHARD J. ABRAMO Project Director

EDUCATION:

B.S., Biology (Special Emphasis Chemistry), St. Francis College, 1980

EXPERIENCE:

Mr. Abramo has over 21 years' experience in the hazardous waste industry. During that period he has participated in and/or managed hundreds of emergency response, decontamination, Superfund and State-mandated remediation projects.

President · Code Environmental Services, Inc. · Carteret, New Jersey · 1989 - Present.

Mr. Abramo manages all corporate activity and is directly responsible for profit and loss status, budgeting, estimating, technical review, regulatory interaction and purchasing. He also is responsible for contract review and negotiation, client interface, job performance, QA/QC, equipment, personnel and risk evaluation.

Regional Operations Manager · ENSCO Environmental Services, Inc. · Edison, New Jersey · 1986 - 1989.

Mr. Abramo established a company presence in the New York/New Jersey metropolitan area and was responsible for contract operations, regional profit and loss status, estimating, budgeting, personnel management, accounting and purchasing.

Mr. Abramo was instrumental in establishing ENSCO's only TSDF for handling and processing lab packs. He personally took ENSCO's Dalton, Georgia facility from the earliest permit submittal stage through facility construction and finally to actual start-up.

Another area in which Mr. Abramo was actively involved was ENSCO's transportable incineration program. As operations manager of a \$9 million on-site incineration project for the United States Air Force in Gulfport, Mississippi, Mr. Abramo oversaw RCRA Part B equivalent permit submittal, site preparation, incinerator mobilization and construction, incinerator trial burns, contaminated soils excavation, and all other project activity associated with the on-site incineration of over 35,000 tons of dioxin-laden soil.

Mr. Abramo also took a key role in preparing a Modified RCRA Part B Certification for ENSCO's \$12 million transportable incineration project at the Lenz Oil Superfund site in Lamont, Illinois.

Based on his experience at the Gulfport and Lenz Oil sites, Mr. Abramo was assigned to direct ENSCO staff engineers in modifying the incineration system to address real-time field application.

District Manager, Project Manager, QC Supervisor, Emergency Response Coordinator · CECOS Environmental, Inc. · Staten Island, New York · 1980 - 1986.

Mr. Abramo managed CECOS' New York City district office and, in addition to hundreds of emergency response projects, was responsible for numerous, multi-million dollar remediation contracts.

RICHARD J. ABRAMO

Page Two

EXPERIENCE (Continued):

For example, Mr. Abramo provided contract interpretation and overall supervision of a \$4.5 million drum removal project at Ciba-Geigy Corporation's New Jersey facility. By contract end, 15,475 waste drums buried in the client's cell number two landfill had been excavated and disposed of off-site.

Mr. Abramo also managed the \$3.95 million Resolve, Inc. Superfund site remediation conducted under the direction of the U.S. Army Corps of Engineers. Operations involved the excavation, transportation and disposal of 14,000 cubic yards of PCB/organic-contaminated soil.

Mr. Abramo was assigned key roles during both phases of the Lehigh Electric Facility Superfund Site remediation project. He was the Phase I QC supervisor/emergency response coordinator and the Phase II project manager. Phase I entailed removal and disposal of 1,500 PCB transformers and 1,200 PCB capacitors. Phase II involved excavation of 11,500 cubic yards of PCB-contaminated soil, demolition, backfill, final grading, topsoil and seeding. This was the first Superfund site to be de-listed from the NPL and was remediated for approximately \$3.6 million.

As project manager responsible for the construction of three 600,000 gallon settling basins at the Exide Mill Pond site, Mr. Abramo supervised the removal and dewatering of 4,100 cubic yards of pond bottom sediments. This included coordinating work between a number of independent subcontractors responsible for dredging and dewatering. Mr. Abramo managed site operations and directed final contract close-out.

CERTIFICATIONS:

Hazardous Waste Supervisor per Requirements of 29 CFR 1910.120.

SPECIAL TRAINING:

40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.

8 Hour Supervisor's OSHA Health & Safety Training Course for Hazardous Waste Site Activities.

THOMAS M. TOMASSETTI Project Manager

EDUCATION:

B.S., Earth Physical Sciences (Geology), Kean College, 1990. A.S., Construction Technology, San Antonio College, 1985

EXPERIENCE:

Mr. Tomassetti has over 18 years' experience in the environmental and general construction industries. In addition to contract supervision, he has extensive estimating and computer operations experience.

General Manager (1994 - Present), Operations Manager (1993 - Present), Senior Estimator (1991 - 1993) · Code Environmental Services, Inc. · Carteret, New Jersey · 1991 - Present.

Mr. Tomassetti maintains fiscal responsibility for all CODE operations. He also is responsible for establishing and implementing company policy and procedure, evaluating project QA/QC and profitability, reviewing contracts, obtaining required insurance and bonding, reviewing and approving subcontracts, and evaluating proposals before release. In addition, Mr. Tomassetti oversees CODE's computer operations system conducting personnel training, computer maintenance, and upgrading of both network & software programs.

As operations manager, Mr. Tomassetti was responsible for personnel management, purchasing, project scheduling, job set-up, ensuring project-specific equipment/manpower requirements were met, and monitoring project performance.

Mr. Tomassetti has managed/administered a wide variety of remediation contracts including facility decontamination/demolition, soil excavation and slag cover installation projects for Reichhold Chemicals company, containerized material handling/disposal and contaminated soil excavation projects at the Scoville Brass site in Connecticut, and tank farm closure, contaminated stream excavation and vapor extraction system soil remediation pile construction projects at a United Technology Corporation site in New Jersey.

Mr. Tomassetti also served as project administrator of a \$2.1 million lagoon capping and closure contract in Hazleton, Pennsylvania. As such, he coordinated submittals, scheduled site operations, prepared the budget, secured required materials, supplies and equipment, executed subcontract agreements, and managed site personnel in the performance of contract operations.

Mr. Tomassetti managed site operations at CODE's \$250,000 UST removal contract for the New Jersey Department of Transportation in Sparta, New Jersey. In addition to the tank removal work, Mr. Tomassetti supervised the construction of a road and a concrete storm drainage system.

Mr. Tomassetti previously served as CODE's senior estimator.

Cost Engineer/Foreman · Yonkers Contracting Company · Yonkers, New York · 1985 - 1991.

Mr. Tomassetti joined Yonkers (one of the nation's largest contractors) as a project foreman in the Summers of 1985 and 1986. He became a full-time foreman in 1987 and was later promoted to cost engineer.

THOMAS M. TOMASSETTI

Page Two

EXPERIENCE (Continued):

As cost engineer, Mr. Tomassetti played a key role in the \$98 million Route 18 construction project for the NJDOT. During the project, three miles of roads were constructed through sensitive wetlands. As foreman, Mr. Tomassetti supervised work associated with the \$96 million Route 78 road project through the Watchung Wildlife Preserve.

Additional NJDOT work to which Mr. Tomassetti was assigned included management of the Route 24 Morristown project which included wetlands management and construction through PCB contaminated areas. Mr. Tomassetti was responsible for all environmental work and development of computer cost programs.

General Job Foreman · Cris-Tech Associates · 1984 - 1985.

Mr. Tomassetti served as general job foreman of Cris-Tech's \$10 million Southland Corporation project which involved the installation of three pumping stations and a storm water recovery system with two lined retention ponds.

CERTIFICATIONS:

Hazardous Waste Supervisor per Requirements of 29 CFR 1910.120.

SPECIAL TRAINING:

40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.

8 Hour Supervisor's OSHA Health & Safety Training Course for Hazardous Waste Site Activities.

FREDERICK C. ANDLAUER Field Chemist/QC Officer

EDUCATION:

B.S., Environmental Studies, East Stroudsburg University, Pennsylvania, 1985.

EXPERIENCE:

Mr. Andlauer has over 16 years of experience in the analysis, handling and disposal of waste laboratory chemicals. He is highly skilled in waste consolidation, packaging, completion/review of inventory lists, manifests and labels, and drum tracking.

Lab Pack Manager, Site Supervisor, Field QA/QC Officer · Code Environmental Services, Inc. · Carteret, New Jersey · 1989 - Present.

As the company's lab pack manager, Mr. Andlauer is responsible for managing CODE's annual waste disposal contracts, supervising the company's team of project chemists, purchasing lab pack supplies, and updating/recording all current state and federal laws and regulations relating to the proper shipment and disposal of hazardous waste.

- Supervised CODE's \$600,000 per year annual lab pack contract with Rutgers, The State University
 of New Jersey. In addition to waste identification, handling, packaging, transportation and disposal,
 implemented creative bulking and recycling programs which have resulted in considerable cost
 savings for Rutgers.
- Supervised the packaging and disposal of large quantities of various mercury waste streams (i.e., broken mercury thermometers mercury compounds, and laboratory glassware) generated by Rutgers University at seven campuses and 14 field stations. The work was conducted as part of the company's multi-year service contract with Rutgers. Also detached from their mountings, and occasionally drained over 100 mercury filled manometers, barometers, x-ray tubes, bubble flasks, and a variety of other specialized instruments.
- Manage CODE's annual lab pack contract with FMC Corp. of Princeton, New Jersey. In support of this contract, provide quality control checks of client-packaged waste, conduct waste inventories, package "special" wastes such as dioxin-bearing material, and arrange transportation and disposal.
- Managed waste disposal contract for Pharmacontrol Corporation at its Private Formulations, Inc. facility in Edison, New Jersey. Directed CODE's chemists in implementing a company-designed lab pack and hazardous waste disposal program at this location.
- · Supervised waste disposal contracts for the Paterson Board of Education (service contract to inventory, package and remove approximately 75 drums of lab pack and bulk quantity waste from four locations).
- · Supervised multiple contracts for the U.S. Coast Guard to identify, transport and dispose of lab pack and maintenance chemicals, paint and other wastes from a former supply center in Brooklyn, New York.
- · Managed service contract for and Envirobitech/Xienta, Inc. to inventory, package and dispose of

lab pack wastes from a former biomedical research facility.

FREDERICK C. ANDLAUER

Page Two

EXPERIENCE (Continued):

- Designed and implemented several mercury spill clean-up programs at various Rutgers University locations. Cleaned-up of spilled mercury from several broken thermometers in Hedley Laboratories building on the Cook campus. Collected free mercury and decontaminated a floor area and table surface at the Nelson Biology building on the Busch campus. Collected mercury which had burst from mercury thermometers and mercury containing flasks during a fire in a laboratory in the Busch campus Wright-Reiman laboratory building.
- · Participated in the excavation and removal of over 30,000 cubic yards of PCB contaminated soil located at three Texas-Eastern sites in Linden, Lambertville, and East Hanover, New Jersey. As field chemist was responsible for the collection of post-excavation and waste classification samples.
- Participated in the excavation, transportation, and off-site disposal of 14,000 tons of PCB contaminated soils from the Goose Farm Superfund Site in Plumstead Township, New Jersey.

Lab Pack Coordinator · ENSCO Environmental Services, Inc. · Amherst, New York · 1987 -1989.

Mr. Andlauer's responsibilities included in-field identification of chemical and hazardous wastes for segregation and proper packaging, arranging for transportation and disposal of packaged wastes, facility clean-out and decontamination of affected rooms and equipment, and completing required paperwork and documentation. Served as field chemist/chemical technician on several PCB decomissioning projects which involved removal of PCB-containing electrical devices and equipment, surficial decontamination of PCB-contaminated surfaces, and excavation of PCB-contaminated soil.

Field Analyst · Chemical Waste Management · Princeton, New Jersey · 1985 - 1987.

Mr. Andlauer supervised the preparation of laboratory chemicals and bulk waste streams for shipment to disposal.

Research Associate · East Stroudsburg University · 1985.

In addition to his field-related experience, Mr. Andlauer studied the effects of acid precipitation in Southeastern Monroe County, Pennsylvania.

SPECIAL TRAINING:

- 40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.
- 8 Hour Supervisor's OSHA Health & Safety Training Course for Hazardous Waste Site Activities.
- 8 Hour USDOT HM 126F/181 Course given by Reactive & Explosive Materials Training Corporation at the Middlesex County Fire Academy, March 10, 1993.

JAMES F. MULLIGAN, JR. Project Health and Safety Manager

EDUCATION:

Graduate Studies in Geology, Montclair State College, Montclair, New Jersey, 1978. B.S., Environmental Science, Stockton State College, Pomona, New Jersey, 1976.

EXPERIENCE:

Mr. Mulligan has over 14 years of experience in the environmental industry. He is an experienced manager, supervisor, safety officer, and QA/QC officer.

Project Manager, Safety Officer, QA/QC Officer · Code Environmental Services, Inc. · Carteret, New Jersey · 1998 - Present.

Mr. Mulligan is responsible for managing projects and site operations; implementing Quality Assurance and Quality Control Programs, and enforcing Site-Specific Health and Safety Plans.

- Successfully manage the planning and implementation of several projects (i.e., boom installation, emergency response marine oil spills, USCOE activities).
- · Direct project cost estimating, allocate and schedule resources for projects.
- · Coordinate activities of subcontractors on projects.
- · Analyze each project for regulatory, client, health and safety compliance.
- · Resolve technical questions and make timely decisions to keep projects on schedule.
- · Assist subordinate supervisor and manage equipment operators and technicians; also responsible for interviewing, hiring, scheduling and evaluating.
- · Conduct safety audits and monitor the safety of the field crew. Consistently lead tailgate meetings.
- · Interact and work with government agencies such as NJDEP, USCG, USEPA, USACOR, NYDEC.
- Managed mercury spill clean-up, sampling, and T&D project at the Canrad-Hanovia Lamp Division facility in Newark, New Jersey. Oversaw collection, packaging and off-site T&D of all mercury filled devices located in seven multi-story buildings. Directed mercury spill clean-up and contaminant delineation efforts in several areas of the facility.
- Supervised the dismantlement and packaging for off site T&D of 42 mercury filled manometers located at Cytec's Linden, New Jersey facility.
- Managed multiple PCB remediation efforts under a multi-year remedial service agreement with Cytec, Inc. Directed excavation and off-site T&D of PCB-contaminated soils. Supervised decontamination of PCB contaminated concrete surfaces.

JAMES F. MULLIGAN, JR.

Page Two

EXPERIENCE (Continued):

Emergency Response Coordinator, Field Specialist · Clean Harbors, Inc. · Edison, New Jersey · 1995 - 1997.

Mr. Mulligan primary responsibilities included management of remedial field services associated with the company's CONED contract. The primary contaminant of concern associated with these remedial services was PCB leaking from transformers and other electrical equipment. Remedial efforts involved both soil and water spill clean-up. Also directed an extensive number of surficial PCB decontamination efforts.

Project Manager · Environmental Products & Services · Linden, New Jersey · 1994 - 1995.

Environmental Surveillance · Self Employed · 1992 - 1994

Project Coordinator/Region Sales Representative · International Technology · Avenel, New Jersey · 1987 - 1992

CERTIFICATIONS:

State of New Jersey Department of Environmental Protection "Closure" License # 0015245

SPECIAL TRAINING:

Advanced Project Management
First Aid/CPR Training
40 Hour OSHA Health & Safety Training Course for Hazardous
Qualified Persons Training
Hazardous and Protection Training
Waste Operation Supervisor Training
Emergency Response Training
Supervisor Remediation Training
Quality Assurance/Quality Control (40 Hours)

BRIAN SCHORTJE Site Health and Safety Officer

EXPERIENCE:

Mr. Schortje has over four years' experience in the implementation and enforcement of health and safety protocol at remedial action sites.

Site Health and Safety Officer, Field Technician · Code Environmental Services, Inc. · Carteret, New Jersey · 1997 - Present.

Mr. Schortje is responsible for enforcement and implementation of Site-Specific Health and Safety Plans, Accident Prevention Plans, Emergency Response Plans, and Air Monitoring Plans on various environmental construction and remediation projects. His duties include conducting site safety meetings; controlling site access; delineating/maintaining work zones; conducting site safety inspections; performing air monitoring and environmental sampling; collecting and documenting meteorological data; reporting and record keeping; monitoring personnel and equipment decontamination operations; and coordinating emergency response activities.

Representative Experience:

- FMC Site, Carteret, NJ (Emergency Response of IOIC Seep from Embankment into Raritan River). Managed exposures of employees using PID and LEL meters. Monitored activities related to safe operations of oil recovery on water. Served as HSO during installation of sheet pile containment wall.
- Atlantic City Brigentine Connector Tunnel, Atlantic City, NJ. Managed site-wide air monitoring program for respirable dust, landfill gas exposures, confined space evaluation.. Provided oversight of contaminated soils excavation and handling operations.
- Merck & Co. Site, Rahway, NJ. Operated and maintained an Aztec Low Temperature Thermal Desorption (LTTD) Portable Soil Purification System at the client's facility. Monitored system compliance to ensure compliance with NJDEP operating permits.

Mr. Schortje joined CODE as a field technician and has participated in an significant number of environmental construction, remedial action, soils excavation, lab-pack, drummed waste disposal, and facility decontamination/demolition projects.

Customer Service Representative · Ace Town Hardware · Clark, New Jersey · 1993 - 1997.

Mr. Schortje was responsible for customer satisfaction; problem solving; preparing inventory reports and compensating customer repair supplies; and unloading and organizing vendor supplies using a Case forklift.

EDUCATION:

HS Diploma, Arthur L. Johnson Regional High School

Small Engine Repair Diploma, Somerset Vocational Technical School 40 Hour OSHA Health & Safety Training Course for Hazardous Waste Site Activities with Annual Updates.

APPENDIX 3 Site Location/Lay-Out Plan

INSERT SITE LAY-OUT PLAN
SHOWING SITE ENTRANCE, WORK ZONE BOUNDARIES,
EMERGENCY EVACUATION ROUTES, ETC.

APPENDIX 4 Posted Regulations

SAFETY REGULATIONS

(Post On-Site)

Regulations

- 1. Eating on the site is PROHIBITED except in specifically designated areas.
- 2. All project personnel on the site must wear clean or new gloves daily.
- 3. If you get wet to the skin, you must wash the affected area with soap and water immediately. If cloths in touch with the skin are wet, these must be changed.
- 4. You must wash your hands and face before eating, drinking, or smoking.
- 5. Observe regulations on washing and removing boots before entering the dressing room or a clean area and showering before going home.

Recommendations

- 1. Do not smoke with dirty hands; better yet, do not smoke.
- 2. Check for any personal habit which could get soil or water into your body.
 - Examples: Food off your fingers, wiping your face or nose with a dirty hand or running a dirty hand through your hair.
- 3. Check that any regularly worn clothing is clean. Examples include dirty watchbands, neck chains, and a dirty liner on your safety helmet. Safety practices with poisonous chemicals can be summed up with a few words:

Don't breathe in chemical odors and don't touch the water, soil, and sludge.

If you do get dirty or wet, clean up as soon as possible.

SAFETY REMINDER FOR TOXIC CHEMICALS

(Post On-Site)

Chemicals can't cause problems unless you breathe them, eat them, or put them on your skin.

Chemicals in Gases, Soils, Sludge, and Water

Don't let them go into your mouth, nose, or stay on your skin.

Use common personal hygiene.

- 1. Don't eat or drink on the site.
- 2. No smoking in the area of work.
- 3. Wear protective clothing.
- 4. Glove liners must be clean.
- 5. Wash your hands whenever practical. Wash before eating, drinking, or smoking.
- 6. Don't carry chemicals home to your family. (For example, on clothing, mud in the car, dirty hands.)
- 7. Follow strictly the HASP.

APPENDIX 5
Emergency Response/Contingency Plan

EMERGENCY RESPONSE & CONTINGENCY PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

The following Emergency Response and Contingency Plan considers and recommends:

- · Preventative Measures;
- Personnel training and regular safety meetings conducted to reduce the likelihood of accidents;
- Mitigative measures to limit the scope of any accident; and
- · Contingency actions to respond to and remedy the effects of accidents.

1.0 PRE-PLANNING

All work will be coordinated with the Trust's Representative In addition, local police and fire departments, local hospital(s), and local ambulance services will be contacted by the Project Health and Safety Manager and/or Site Health and Safety Officer (SHSO) prior to initiation of site operations to inform them of scheduled remedial activities at the site. Arrangements for emergency communication will be made with these organizations prior to initiating on-site operations.

As required by Section 4.0 of the HASP, emergency response procedures will be covered as part of each site personnel's training. Training in site-specific emergency procedures will be provided by the site health and safety officer before work begins on-site. This training will include, but is not limited to, the following;

- · Emergency chain-of-command;
- · Communication methods and signals;
- · Location of phones and emergency numbers;
- · Use of emergency equipment;
- · Evacuation and emergency procedures;
- · Off-site support;
- · Site-specific hazards;
- · Decontamination procedures;
- · Standard operating procedures; and
- · Location and use of first aid equipment.

2.0 EMERGENCY CHAIN-OF-COMMAND

Personnel shall immediately notify the SHSO in the event of an emergency using available communications (see Section 3.0).

The SHSO shall make a rapid assessment of the situation and take appropriate action which (depending upon emergency circumstances) can include notifying the SHSO and the Trust's Representative of the situation; initiating engineering controls (i.e., dust suppression, ventilation, etc.); ordering the suspension of work; ordering evacuation of the work zone; implementing emergency altering and response procedures; requesting emergency medical treatment; and/or administering first aid.

3.0 COMMUNICATION METHODS AND SIGNALS

For emergency situations when two-way radio communication is not available or practical, oral, hand, and semaphore safety signals have been established to protect project personnel. These signals will be made available to personnel for all phases of operation before going on-site. This will ensure quick communication during adverse or emergency situations.

Examples of established signals and their meanings are provided below.

<u>Signal</u> <u>Indicates</u>

Hand gripping throat Out of air, can't breath

Wave hands over head from side-to-side

Attention: stand-by for next signal

Swing hand from direction of person receiving signal to directly overhead and through in a circle Come here

Pointed finger on extended arm

Look in that direction

Grip partner's/buddy's wrist or both hands around wrist

Leave the area immediately

Hands on top of head Need assistance

Thumbs up OK, I'm alright, I understand

Thumbs down No, negative

Examples of audio signals include:

Short blast of airhorn Caution or look here

Four (4) blasts of airhorn Leave the area

Each field team member will be assigned a buddy. Field personnel will watch for hazards or problems his/her buddy might encounter. Buddies will pre-arrange hand signals or other means of emergency signals for communication when respiratory protection or distance makes communication difficult. Communication between buddies must be maintained at all times. Visual contact must be maintained between buddies. Further, buddies must remain in close proximity to each other in order to assist in case of emergencies.

4.0 EVACUATION

Emergency escape routes will be designated by the SHSO for use in situations where rapid egress from the Exclusion Zone is required. The locations of these routes and the re-assembly area(s) will be indicated on the Site Lay-Out Plans (see HASP, Appendix 3). Site personnel will be notified of specific evacuation routes and re-assembly area(s) during the daily tool-box safety meetings.

An emergency evacuation alarm (air horn) will be kept on-site at all times. As indicated in Section 3.0 above, the audible evacuation signal to be used to shall be short bursts on the air horn (one second burst followed by one second interval of silence). The audible evacuation signal shall be repeated until the site is evacuated. After exiting the work area, personnel will meet at an upwind re-assembly area(s) designated by the SHSO. The emergency alarm will be sounded in the event of any serious problem or emergency (fire, medical, other)

which requires the assistance of site personnel or the evacuation of the construction team.

In all situations when an on-site emergency results in evacuation of the Exclusion Zone, personnel will not be permitted to reenter until:

- · The conditions resulting in the emergency have been corrected;
- · The hazards have been reassessed;
- · The HASP and CP has been reviewed; and
- · Site personnel have been briefed on any changes in the HASP and CP.

5.0 EMERGENCY SERVICES/EMERGENCY VEHICLE ACCESS

Emergency telephone numbers (see HASP, Appendix 7) will be posted at each project site telephone. Directions to the local hospital (see HASP, Appendix 7) also will be posted at the site.

In the event that emergency services vehicles (police, fire, ambulance) need access to a location which is blocked by the working crew operations, those operations (equipment, materials, etc.) will be immediately moved to allow those vehicles access. Emergency crews will be briefed as to site conditions and hazards by the SHSO. All vehicles and personnel will be decontaminated prior to leaving the site.

6.0 WEATHER-RELATED HAZARD RESPONSE

Threats to site personnel can arise from natural causes (i.e., lightening, high winds, etc.). In the event that severe weather is imminent, the SHSO will notify field team members. As the storm approaches, all work will cease, loose objects will be secured, and site personnel will take shelter at pre-arranged locations. After the severe weather event has passed, the SHSO will inspect the work area for safety hazards prior to resuming work.

7.0 SPILL CONTROL & CONTINGENCY PLAN

A site-specific Spill Containment Program is provided in HASP, Appendix 6...

8.0 PERSONAL INJURIES

In the event of personal injuries the following procedures will be enacted.

- 1. **Initial alarm and first aid.** Upon observation of an injury, Contractor employees will quickly get the attention of other nearby workers; immediately act to protect the injured person from a life-threatening situation; render appropriate first aid; and warn unsuspecting persons of the potential hazard.
- Notify the SHSO and the Trust's Representative. Utilizing available personal radio communications
 or other rapid communication methods, the SHSO and the Trust's Representative will be notified of
 the situation, the identity of the injured person, the type of injury, and the project site location.
- 3. Ambulance and hospital services. The SHSO will immediately assess the situation and, if necessary, notify the designated off-site hospital of the emergency situation.
- 4. **Follow-up.** The SHSO will determine why the injury occurred, and will take appropriate steps to prevent a similar recurrence. Events associated with the injury will be recorded in the safety officer's logbook.

An Incident Report Form (sample provided in HASP, Appendix 1) must be completed by the SHSO and submitted to the Project Health and Safety Manager within 24 hours of the injury. The Trust's Representative shall receive a copy of the Incident Report Form within 48 hours of the injury.

8.1 Personnel Injury in the Exclusion Zone

Upon notification of any injury in the Exclusion Zone, the designated emergency signal will be sounded. All site personnel will assemble at a pre-arranged location. A rescue team made up of the SHSO and other personnel as needed who have received property training (see HASP, Section 4.0) will enter the Exclusion Zone (if required) to remove the injured person to the boundary of the Exclusion Zone. The SHSO then will evaluate the nature of the injury. The affected person will be decontaminated as necessary to the extent possible prior to movement to the Support Zone. Appropriate first aid will be initiated (see Section 12.0), and the ambulance and designated medical facility (HASP, Appendix 7) will be contacted if required.

No persons will reenter the Exclusion Zone until the cause of the injury or symptoms of the illness have been determined.

8.2 Personnel Injury in the Support Zone

Upon notification of an injury in the Support Zone, the SHSO will assess the nature of the injury. If the cause of the injury or loss of the injured person does not affect the performance of site personnel, operations may continue. The appropriate first aid will be initiated (see Section 12.0) and necessary follow-up as stated in Section 5.0 above. If the injury increases the risk to others, the designated emergency signal will be sounded and all site personnel will move a prearranged location for further instructions. Activities on site will stop until the added risk is removed or minimized.

9.0 FIRE/EXPLOSION

The following contingency plan will be implemented in the event of a fire at the project site.

- 1. *Initial Alarm.* Upon observation of any on-site fire, personnel must <u>immediately</u> notify the SHSO (or his designated alternate) and the Trust's Representative. No attempt will be made to extinguish the fire prior to sounding the alarm.
- 2. Control and/or extinguish small fires which can be suppressed promptly with available on-site equipment. Without risking personal injury, an attempt will be made to control or extinguish small fire(s) utilizing ABC-type fire extinguishers. Water will not be used except on wood or paper fires.
- 3. Notify local fire company. The SHSO and the Trust's Representative will immediately assess the situation and, if deemed necessary, notify the local fire company (911) of the location and type of fire or explosion. If required, the SHSO and/or the Trust's Representative (or their designated on-site representatives) will immediately order the site evacuated if a fire occurs which cannot be controlled with a portable fire extinguisher.
- 4. **Follow-up.** The SHSO will determine why the fire or explosion occurred, and will take appropriate steps to prevent a similar recurrence. Events associated with the fire or explosion will be recorded in the safety officer's logbook.

An Incident Report Form (sample provided in HASP, Appendix 1) must be completed by the SHSO and

submitted to Project Health and Safety Manager within 24 hours of the fire/explosion. The Trust's Representative shall receive a copy of the Incident Report Form within 48 hours of the fire/explosion.

10.0 PERSONAL PROTECTIVE EQUIPMENT FAILURE

If any site worker experiences a failure or alteration of protective equipment that affects the protection factor, that person and his/her buddy immediately will leave the Exclusion Zone and notify the SHSO. Reentry will not be permitted until the equipment has been replaced or repaired, and the affected areas of the person's body have been decontaminated if applicable.

11.0 OTHER EQUIPMENT FAILURE

If any on-site equipment other than PPE (see Section 10.0 above) fails to operate properly, the SHSO will be notified. The SHSO then will determine the effect of this failure on continuing operations on site. If the failure affects the safety of personnel or prevents the completion of the Work Plan tasks, all personnel will leave the Exclusion Zone until the situation is evaluated and all appropriate actions taken.

12.0 EMERGENCY EQUIPMENT & ON-SITE FIRST AID

Emergency and first aid equipment to be maintained on-site includes:

- The active work area shall be provided with approved, portable emergency eye wash and shower units in accordance with ANSI Standard Z358.1 and minimum rating 2A-10 B:C type dry chemical fire extinguishers.
- At least one "industrial" first aid kit and stretcher shall be provided and maintained fully stocked at an easily accessible, uncontaminated location to be determined on-site by the SHSO. Additional first aid kits will be provided in the event active work areas are so isolated or separated as to make use of the one first aid station impractical.
- First aid/CPR kit locations shall be specifically marked by the SHSO and provided with adequate water and other supplies necessary to cleanse and decontaminate burns, wounds, or lesions. First aid stations shall be supplied with a buffer solution for testing acid and caustic burns.
- At least two (2) First Aid Technicians certified by the American Red Cross or other approved agency shall be on-site at all times.
- 2A-10 B:C type dry chemical fire extinguishers shall be provided at all site locations where flammable materials present a fire risk.
- A minimum of two self-contained breathing apparatus (SCBAs) or lower level of protection as site conditions allow shall be maintained in contaminated work areas.

Agencies and medical facilities to be contacted in the event of an on-site emergency are identified in HASP, Appendix 7. The Emergency Response Notification Table also includes the route to the nearest hospital. The table shall be posted in a prominent location(s) on-site.

If a site worker becomes injured or ill, Red Cross first aid procedures will be followed. First aid or other appropriate initial actions will be provided by the certified first aid technician closest to the incident. NOTE:

When protective clothing has been grossly contaminated during an accident/injury, contaminants may be transferred to treatment personnel or the wearer and cause injuries. Unless severe medical problems have occurred simultaneously with splashes, protective clothing should be washed off as rapidly as possible and removed. If the worker is ambulatory or can be moved, he/she will be taken to the personnel decontamination station where decontamination procedures, additional first aid, or preparation for transport to the hospital will be accomplished. In the event that the victim could not be decontaminated, the rescue service provider must be notified of that situation.

If the injury to the worker is chemical in nature, the following first aid procedures are to be instituted:

- Eye Exposure. If contaminated solids or liquids get into the eyes, wash eyes immediately at the emergency eyewash station using large amounts of water and lifting the lower and upper lids occasionally. Wash for at least 15 minutes. Obtain medical attention.
- > Skin Exposure. If contaminated solids or liquids get on the skin, promptly wash the contaminated skin using soap and water. Obtain medical attention immediately when exposed to concentrated solids or liquids.
- **Respiratory Exposure.** Move victim to fresh air at once and begin CPR. Obtain immediate medical attention.
- > Ingestion Exposure. For swallowed contaminants, identify the item swallowed. Follow appropriate procedures and obtain medical attention as soon as possible.

NOTE: Any person transported to the hospital for treatment related to an exposure injury will take with them the appropriate information (i.e., MSDSs) on the chemical(s) to which he/she has been exposed. MSDSs for chemicals known or suspected to exist on-site shall be maintained in the CODE's field office by the SHSO.

APPENDIX 6 Spill Containment Program

SPILL CONTAINMENT PLAN

CHEMSOL, INC. SUPERFUND SITE "Remedial Work Element I, Soils"

The purpose of this Spill Containment Plan (SCP) is two-fold. It is designed to:

- 1. Prevent and control accidental discharge of polluting materials to surface soils or groundwater, and
- 2. Minimize and abate hazards to human health and the environment from hazardous waste releases to air, soil, or surface water which may occur during sampling, staging, and transportation.

Copies of this plan will be maintained by project management in the CODE's field office. This plan will be reviewed with field personnel prior to project start-up and thereafter as necessary during regular weekly safety meetings and daily briefings.

1.0 SPILL EMERGENCY NUMBERS

The names and phone numbers of emergency services and offices to be contacted in the event of a spill or other on-site emergency is provided in HASP, Appendix 7. This table will be posted by the Site Health and Safety Officer (SHSO) in prominent position(s) throughout the site.

2.0 **DEFINITION**

For the purposes of this plan, spills are defined as any material accidentally or intentionally leaked, pumped, poured, dumped, or emitted onto the ground, surface water, groundwater, or air. All spilled material will be considered hazardous; cleaned up following established spill response procedures; and reported as described in Section 4.0 of this plan.

Spills will be categorized in one of two ways: Priority 1 or Priority 2.

- > **Priority 1 spills** result in a significant release of contamination into the air or onto the ground outside the exclusion zone.
- Priority 2 spills result in minor spillage (less than five [5] gallons) which can be cleaned up easily.

3.0 POTENTIAL SOURCES & PREVENTATIVE MEASURES

The contracted work has several potential spill sources. These include, but are not necessarily limited to:

Potential Spill Source	Preventative Measure(s)
Transporting waste material to selected off-site disposal facilities.	General: The SHSO (or his designee) will be required to verify that all transportation vehicles used in support of this contract are equipped with appropriate spill response equipment; and that the drivers have received proper spill response training and maintain all required federal and state licenses and certifications.
	Loads will be secured (tied-down, covered, etc.) and transport vehicles checked by the SHSO or his designated representative prior to release from the site.
Refueling on-site equipment	CODE will prohibit the long-term storing of diesel fuel. CODE will limit the amount of fuel kept on-site to only that required for weekly equipment usage.

Potential Spill Source	Preventative Measure(s)
General Spill Prevention Requirements:	Easily accessible spill response stations will be set up containing absorbent pillows, floor dry, shovels, and brushes to be used in the event of a spillage. The location of these stations will be known to all site personnel.
	Chemically rated fire extinguishers will be placed in key locations known to all site personnel.

4.0 SPILL RESPONSE PROCEDURES

The following procedures will be utilized in the event of a spill or release at the project site.

4.1 Initial Containment & Response

In the event of a spill, the following initial containment and response procedures must be implemented immediately.

- 1. Administer first aid to injured/contaminated persons. Any employee observing a spill will act immediately to remove and/or protect injured/contaminated persons from any life-threatening situation. First aid and/or decontamination procedures (see Emergency Response/Contingency Plan Section 12.0) will be implemented as appropriate.
- 2. Warn unsuspecting persons/vehicles of the hazard. Personnel will act to prevent any unsuspecting persons from coming in contact with spilled materials by alerting other nearby persons and by obtaining assistance of other project personnel who are familiar with spill control and cleanup techniques.
- 3. **Stop the spill at the source, if possible.** Without taking unnecessary risks, personnel will attempt to stop the spill at the source. This may involve activities such as uprighting a drum, closing a valve, or temporarily sealing a hole with a plug. Contractor personnel will not expend more than a brief effort prior to notifying the SHSO.
- 4. **Notify the HSO.** Utilizing available on-site communication systems or other rapid communication procedures, the SHSO will be notified of the spill, including information on material spilled, quantity, personnel injuries, and immediate life-threatening hazards.

NOTE: If a flammable liquid is involved in the spill, remove all ignition sources and monitor for explosive conditions with an explosimeter during the clean-up. Also, remove any surrounding materials that might chemically react with the spill materials.

4.2 Spill Containment

The SHSO will make a rapid assessment of any spill occurring at the project site; apply the appropriate safety considerations to the use of protective clothing and equipment in the spill release zone; and direct primary containment measures.

Depending upon the nature of the spill, primary containment measures may include, but are not limited to:

Constructing a temporary containment berm to control the horizontal flow of the spill using absorbent pads, booms, sandbags, sand, and/or other inert materials;

- Placing drums under the leak to collect the spilling material before it flows onto the ground;
- Digging a sump, installing a polyethylene liner and diverting the spilled material to the sump; and/or
- > Transferring the material from its original container to another container.

Spills occurring between the project site and the off-site TSDF will be initially contained by the driver using on-board spill response equipment.

The SHSO will notify the Trust's Representative about the spill and steps taken to institute primary containment.

4.3 Spill Clean-Up

The SHSO and project manager will develop an incident-specific spill clean-up plan which takes into consideration associated hazards, quantity of spilled material, disposal methods, and costs. The incident-specific spill clean-up plan will be reviewed for acceptance by the Trusts's Representative and/or other involved federal, state, or local oversight personnel.

Once approved, the spill clean-up plan will be implemented under the direct supervision of CODE's Site Superintendent.

Generally, all visually detectable spills, leaks, or releases of fuel oil will be collected and cleaned up using absorbent pads, booms, sandbags, sand, and/or other inert materials as practicable using the response procedures outlined below.

Spill Type	Response
Waste Oil on Ground	Contain spill and excavate visually contaminated soil. Containerize, sample for classification purposes, and dispose off-site.
Building/Paved Surfaces	Contain spill. Power wash contaminated area. Collect and containerize resultant washwater. Sample for classification purposes. Off-site dispose.
Vehicle	Power wash in CRZ. Collect, handle, and dispose of decon fluids.
Waste from Truck Spilled on Roadway	Contain spilled material. Collect, containerize, and remove spilled material. Sample for waste classification purposes. Dispose off-site.

4.4 Inspection

The Trust's Representative, SHSO, and Project Manager will jointly inspect the spill site to determine that the spill has been cleaned up to the satisfaction of the Trust's Representative and/or involved regulatory agencies.

4.5 Spill Reporting

In the event of an incident, CODE will:

- 1. Immediately contact CODE's Project Manager and the Trust's Representative.
- 2. Initiate the emergency procedure steps provided in Sections 4.1 and 4.2 of this Plan, and
- 3. Complete a Spill Report Form for submittal to the Project Manager and the Trust's Representative.

CODE will be responsible for reporting any Priority 1 spills immediately following the incident. A written report will be submitted not more than seven days after the telephone call reporting the occurrence. The written report will include the item spilled, quantity, identification and manifest numbers, whether the amount spilled is EPA/State/District reportable, exact location, containment procedures used, anticipated clean-up and disposal procedures, and disposal of spill residue.

5.0 EQUIPMENT

The type of equipment which will be utilized by CODE for spill prevention procedures is identified below.

- > Spill (absorbent) pads;
- > Floor dry;
- Shovels and brushes;
- Salvage drums;
- Polyethylene sheeting;
- Sandbags;
- > Pneumatic foam;
- > Emergency eye wash station;
- > Emergency decontamination equipment;
- Fire extinguishers, 10 A-20BC rated; and
- Modified Level D PPE.

6.0 ADDITIONAL ITEMS

In compliance with Paragraph J or the US DOL OSHA Final Rule for Hazardous Waste Operations and Emergency Response, 29 CFR 1926.65, CODE has incorporated the following additional items into its SCP.

6.1 Project Organization & Chain-of-Command

Project organization and lines of authority shall be as specified in HASP, Section 2.0.

6.2 OSHA Training & Medical Surveillance Programs

Project training and medical surveillance requirements are discussed in HASP Sections 4.0 and 6.0, respectively.

6.3 First Aid Plan

Agencies and medical facilities to be contacted in the event of an on-site emergency are identified in the Emergency Notification Table provided in HASP, Appendix 7. This table also includes directions to the nearest hospital.

If a site worker becomes injured or ill while working in the exclusion or contamination-reduction zone, Red Cross first aid procedures will be followed as detailed in the Emergency Response/Contingency Plan, Section 12.0.

6.4 Fire Prevention & Response Plan

CODE will keep the site free of debris and rubbish and limit the amount of diesel fuel kept on-site to only that required for weekly equipment usage. In addition, chemically rated fire extinguishers will be placed in key locations known to all site personnel In the event of a fire at the contract site, CODE will implement the response procedures set forth in Emergency Response/Contingency Plan, Section 9.0

6.5 Communication Plan

For emergency situations where radio communication systems are not available or are not in use, oral, hand, and semaphore safety signals have been established to protect project personnel. These will be made available to personnel for all phases of operation before going on-site. This will ensure quick communications for use during adverse or emergency situations. Examples of established signals and their meanings are provided in HASP, Section 8.2.

6.6 Community Protection/Evacuation Plan

Prior to initiation of on-site operations, the SHSO will contact the local fire company and the local HAZ-MAT emergency response team to establish an evacuation plan for the facility and/or nearby local residences in case of fire, explosion, or major vapor release at the project site.

6.7 Use of Posters

The following posters will be used to remind employees and other persons of known and unknown dangers, safety rules, and emergency telephone numbers.

- > "Unauthorized Personnel Keep Out: DANGER"
- > "Emergency Eye Wash"
- ➤ "First Aid"
- Fire Extinguishers" (Several fire extinguishers will be provided)
- ➤ "No Smoking"
- Emergency Telephone Numbers/Emergency Medical Care (HASP, Appendix 7).

APPENDIX 7 Emergency Notification Numbers and Route to Hospital

EMERGENCY NOTIFICATION TABLE

CHEMSOL, INC. SUPERFUND SITE

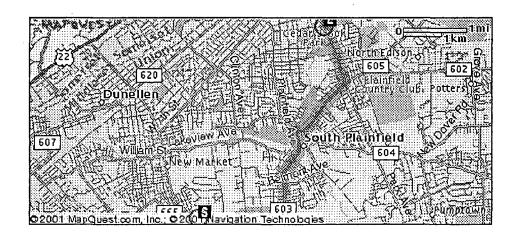
POST ON-SITE

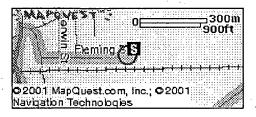
POST ON-SITE				
Ägency	Contact	Phone Number		
Site Emergencies		911		
Police	Piscataway Police Department	(732) 562-1100		
	Middlesex County Police Department	911 or (732) 745-0087		
Fire	Piscataway Fire Department	911 or (732) 562-2315		
Hospital	Muhlenburg Regional Medical Ctr. Park Avenue and Randolf Road Plainfield, New Jersey 07060	(908) 689-2000		
Trust's Representative (de maximis, inc.)	Bill Lee, Project Engineer	(908) 735-9315 Office (000) 000-0000 Mobile		
Contractor (Code Environmental)	Tom Tomassetti Project Manager	(732) 969-2700 Office (732) 000-0000 Pager		
v.	Jim Mulligan Project Health & Safety Manager	(732) 969-2700 Office (732) 989-0788 Pager		
	Brian Schortje Site Health & Safety Officer	(732) 969-2700 Office (000) 000-0000 Cell Phone		
Emergency Disaster Control		(732) 356-0087		
Chemical Emergency Advice	CHEMTREC	(800) 424-9300		
NJDEP	Spill Hotline	(877) 927-6337		
USEPA	Emergency Response Center	(800) 425-8500		
OSHA	Regional Office	(215) 596-1201		
Poison Control Center	Hotline	(800) 962-1258		
DIRECTIONS TO HOSPITAL: (Map Attached)	Muhlenburg Regional Medical Center (23 minutes) from the project site at Pa Plainfield, New Jersey.			

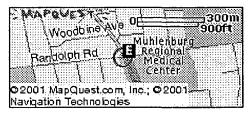
FROM THE SITE: Start out going West on FLEMING ST towards CHARTER ST by turning right (0.2 miles). Turn RIGHT onto S WASHINGTON AVE. (0.1 miles). Turn LEFT onto S WASHINGTON AVE/CR-529 (0.1 miles). S WASHINGTON AVE/CR-529 becomes CR-529/STELTON RD (0.6 miles). Turn LEFT onto NEW BRUNSWICK AVE. (0.3 miles). Turn SLIGHT RIGHT onto TYLER PL. (0.3 miles). Turn LEFT onto S CLINTON AVE/CR-663 (0.1 miles). Turn RIGHT onto ST NICHOLAS AVE. (0.6 miles). Turn LEFT onto CR-603/HAMILTON BLVD. (1.1 miles). Turn SLIGHT LEFT onto CR-603/LAKEVIEW AVE. (0.4 miles). Turn RIGHT onto MAPLE AVE/CR-605 (1.1 miles). Turn LEFT onto PARK AVE/CR-531. (0.5 miles). PARK AVE/CR-531 becomes PARK AVE. Hospital is located at intersection of Park Avenue and Randolf Road.

MAP TO HOSPITAL

Muhlenburg Regional Medical Center Park Avenue & Randolf Road, Plainfield, New Jersey (908) 688-2000







DIRECTIONS FROM THE SITE: Start out going West on FLEMING ST towards CHARTER ST by turning right (0.2 miles). Turn RIGHT onto S WASHINGTON AVE. (0.1 miles). Turn LEFT onto S WASHINGTON AVE/CR-529 becomes CR-529/STELTON RD (0.6 miles). Turn LEFT onto NEW BRUNSWICK AVE. (0.3 miles). Turn SLIGHT RIGHT onto TYLER PL. (0.3 miles). Turn LEFT onto S CLINTON AVE/CR-663 (0.1 miles). Turn RIGHT onto ST NICHOLAS AVE. (0.6 miles). Turn LEFT onto CR-603/HAMILTON BLVD. (1.1 miles). Turn SLIGHT LEFT onto CR-603/LAKEVIEW AVE. (0.4 miles). Turn RIGHT onto MAPLE AVE/CR-605 (1.1 miles). Turn LEFT onto PARK AVE/CR-531. (0.5 miles). PARK AVE/CR-531 becomes PARK AVE. Hospital is located at intersection of Park Avenue and Randolf Road.

APPENDIX G

REMEDIAL ACTION CONTINGENCY PLAN

Brown and Caldwell

Remedial Action Contingency
Plan
Remedial Work Element I, Soils
Chemsol Inc. Superfund Site

September 2001

REMEDIAL ACTION CONTINGENCY PLAN REMEDIAL WORK ELEMENT (RWE) I, SOILS CHEMSOL INC. SUPERFUND SITE PISCATAWAY, NEW JERSEY

Prepared for:

Chemsol Inc. Superfund Site Environmental Remediation Trust

Prepared by:

Brown and Caldwell 440 Franklin Turnpike Mahwah, New Jersey 07430 (201) 818-6055

20541.130

September 2001

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Appendix A - MSDS

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1.0 PURPOSE AND SCOPE

This Remedial Action Contingency Plan has been prepared to outline the emergency response procedures for a potential emergency situation at the Chemsol Inc. Superfund Site. This plan also identifies the emergency contact personnel and the notifications required in the event of an emergency. This plan supplements the Health and Safety Plan for the Chemsol Inc. Superfund Site.

The Remedial Action Work Plan (RAWP) should be referenced to obtain the overall project work scope and the roles and responsibilities of the project team. In addition, the RAWP provides a summary of all the supplemental work plans to fully describe the project activities.

Copies of the Remedial Action Contingency Plan will be distributed to: Township of Piscataway Mayor's office, Piscataway Police Department, Piscataway Fire Department, and Muhlenburg Hospital, the Directors of Emergency Management for the Towns of Piscataway and South Plainfield.

1.1 PROJECT SCOPE

The scope of work for this project is the Remedial Work Element I – Soils (RWE I) as described in the Consent Decree entered on January 26, 2000. The RWE I addresses the excavation and disposal of soils at the site. The objectives of the remedial action include:

- Excavation and off-site disposal of surface soils (0-2 feet) with PCB concentrations greater than 1 ppm and lead concentrations greater than 400 ppm.
- Excavation and off-site disposal of subsurface soils (2-6 feet) in the vicinity of Borings 74
 and 76 with total volatile organic concentrations above the New Jersey Residential Direct
 Contact Cleanup Criteria.

Restoration of the excavated area

1.2 SITE BACKGROUND AND LOCATION

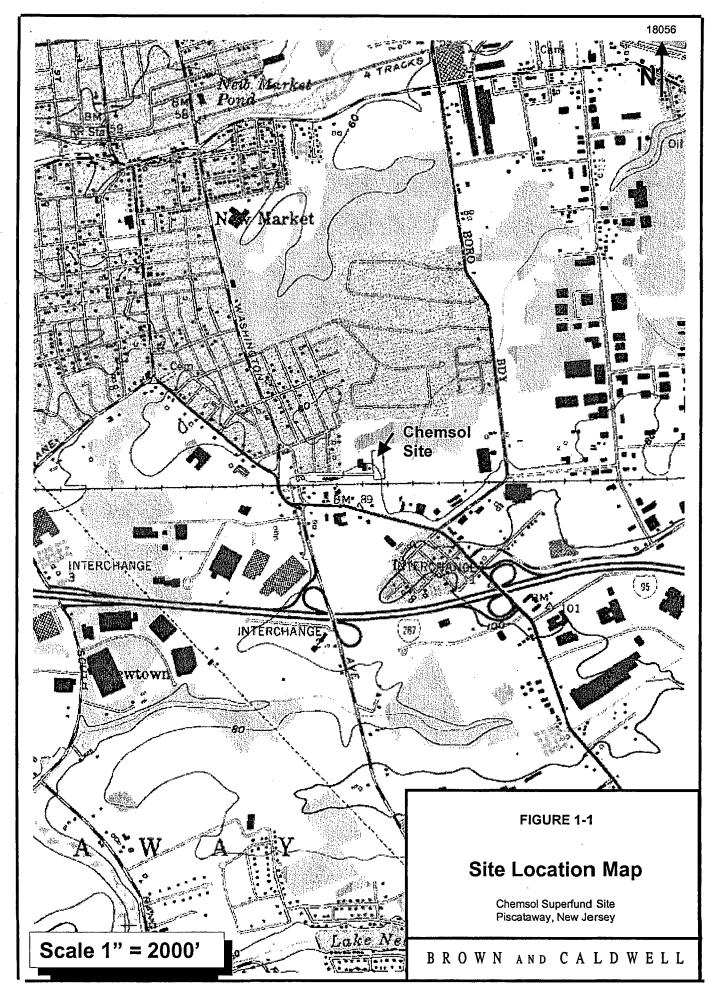
The Chemsol Inc. Superfund Site, currently owned by Tang Realty Inc. (TRI) is located at the end of Fleming Street in Piscataway, New Jersey. The site consists of Lots 1.01 and 1.02 on Block 229.1 which together occupy approximately 40 acres. The majority of the site activities occurred on Lot 1.02 which is open and flat. Lot 1.01, located north and east of Lot 1.02, is primarily wooded. The site was operated during the 1950s and 1960s as a solvent recovery and waste processing facility by a chemical firm known at various times as Chemsol Corporation and Chemsol Inc. and was closed in 1964. The site was re-zoned in 1978, from industrial to residential, and in September of 1983 the site was placed on the Superfund National Priorities List. The location of the site is presented in Figure 1-1.

The emergency response procedures contained in this plan will apply to RWE I activities described in Section 1.1.

1.3 MATERIAL AND WASTE INVENTORY DURING CONSTRUCTION ACTIVITIES

The location of the construction activities has been discussed in Section 1.2. The materials and waste considered potential sources (stored or accumulated) for spill or release include:

- gasoline and diesel fuel for equipment and vehicles;
- oils and various equipment fluids;
- groundwater and decontamination water;
- drill cuttings and fluids contained in drums and the tanker truck; and
- contaminated soils and sediments.



1.4 REMEDIAL ACTION ACTIVITIES

A description of the remedial action activities is provided below.

Excavation and Disposal of Soils and Sediments. Soils and sediments will be excavated to the horizontal and vertical limits shown on Figure 1-2. Soils excavation will be two feet deep except in the vicinity of Borings 74 and 76, where soils will be excavated to a depth of six feet. Sediments from streams will be excavated to a depth of approximately 6-12 inches. Excavated soils and sediments are non-hazardous, with the exceptions of soils with lead concentrations above the TCLP limit in the vicinity of Test Pit 7, locations where PCB concentrations are greater than 50 ppm, and soils with VOC concentrations above the TCLP TCE limit in the excavation areas of SB-74 and SB-76. Excavated soils will be transported off-site and disposed at an approved disposal facility. Access to and from the site will be from a new access roadway to be constructed from New Brunswick Avenue to the work area.

Restoration. Site restoration activities will consist of backfilling the excavated areas with clean subsoil or coarse stone and vegetating. As part of the restoration activities, disturbed wetland areas will be restored and mitigated. The disturbed areas of the stream will be restored with topsoil, erosion control matting, and vegetation.

Miscellaneous Activities. An access road and a stream crossing will be constructed to provide access for construction vehicles. The Well C-1 groundwater recovery and effluent piping within the excavation limit will be replaced. Two existing concrete pads at the site will be demolished and the concrete debris will be sent off-site for recycling. Existing drums containing drilling cutting and PPE from previous investigation activities at the site will be characterized and disposed off-site. Existing waste soil stockpiles and a tanker truck will also be characterized and disposed off site.

The remedial action activities described above will generate the following quantities of waste materials that will be transported off site for proper disposal:

Non-hazardous soils containing PCBs	43,000 Tons
Hazardous soils containing PCB concentrations	120 Tons
over 50 ppm	
Hazardous soils containing VOCs	4,600 Tons
concentrations above TCLP limits	
Hazardous soils containing lead concentrations	200 Tons
above TCLP limits	
Drums containing drill cuttings and PPE	370 Drums
Waste soil stockpiles	2,300 Tons
Non-hazardous concrete debris	450 Tons

2.0 COORDINATION AND COMMUNICATION

2.1 ROLES AND RESPONSIBILITIES

Trust. The term "Trust" will refer specifically to the Chemsol, Inc. Superfund Site Environmental Remediation Trust. The Trust has agreed to perform response activities at the Chemsol, Inc. Superfund Site pursuant to the Consent Decree.

Supervising Contractor/Trust Project Coordinator/Alternate Coordinator. de maximis, inc. has been the firm designated as the Supervising RAC and Project Coordinator under the Consent Decree. Mr. William J. Lee, de maximis, inc., will act as the Project Coordinator on behalf of the Trust. The Project Coordinator is responsible for overall project management and coordination between the Trust and the USEPA, and any other involved parties (e.g., design engineer, construction RAC, etc.). Bonnie Boylan of de maximis, inc. has been designated as the Alternate Coordinator.

EPA Project Coordinator. The EPA Project Coordinator is the Remedial Project Manager assigned by EPA to the Chemsol Inc. Superfund Site RWE I. The EPA Project Coordinator for Remedial Work Element I is Nigel Robinson. The EPA Project Coordinator may designate other representatives to observe and monitor the progress of any work activity and has the authority to halt any work, as provided by the Consent Decree.

TAMS Consultants, Inc. (TAMS). TAMS has been designated by the USEPA as the oversight contractor during implementation of the remedy. A TAMS representative will be on site during remedy implementation to confirm that work is completed in accordance with the approved design documents. Mr. Maheyar Billimoria has been designated as the Project Manager for TAMS.

Design Engineer. The Design Engineer is responsible for the design, drawings, QAPP, and specifications, and is registered as a professional engineer in the State of New Jersey. Brown and

Caldwell is the Design Engineer. The Design Engineer may be appointed as a designated representative of the Supervising Contractor/Project Coordinator, at the discretion of the Supervising Contractor/Project Coordinator.

Remedial Action RAC. The Remedial Action Contractor (RAC) is responsible for the soil excavation, site restoration, and other related activities as specified in the engineering plans and specifications. The RAC is also responsible for implementing CQC activities in accordance with the specifications.

The RAC is an entity with demonstrated experience in performing remedial activities similar to those required for this project and can thus meet the requirements of the project contract. Code Environmental Services, Inc. has been selected as the RAC.

2.1.1 Emergency Response Coordinator

The Health and Safety Officer for the RAC will be designated as the Emergency Response Coordinator during construction activities. The point of contact will either be a telephone at the site support area or by beeper. If the Health and Safety Officer is unavailable, the role of Emergency Response Coordinator will be designated to the Project Manager.

The USEPA and Piscataway Fire Department will be notified of personnel designations to these positions. The notification will provide the person's name, home and work telephone number, home and work addresses, and responses time to the Site. Notification will be made upon initial personnel designations to these positions, prior to the start of construction, and at any time that changes are made.

In the event of an emergency, the Emergency Response Coordinator will be responsible for the following:

- Understand the procedures contained this Plan.
- Determine if conditions constitute an emergency in accordance with the guidance
 provided in this document and the Health and Safety Plan (HASP). Emergency
 conditions include, but are not limited to, hazardous material spills and releases, air
 release events, fire/explosion, vehicular accidents involving hazardous materials
 transport and personal injuries/illnesses.
- Coordinate all required notifications to emergency organizations.
- Coordinate the actions of the Site personnel with the Piscataway Fire Department and Piscataway and South Plainfield Police Departments and outside responders. Provide resources, information and equipment.

The Emergency Response Coordinator will at least have Awareness Level I training per the Emergency Response portion of the HAZWOPER Standard 1910.120(Q)(6)(I). Emergency response personnel responding to the Site must have all training as required under 1910.120(Q).

2.1.2 Emergency Communications

Site personnel will notify the Emergency Response Coordinator as quickly as possible, of any of the following:

- Spill or release of any hazardous or unidentified material.
- Air release event.
- Fire or explosion.
- Vehicular accident involving hazardous or unidentified materials.
- Serious injury or illness.

Any identified site condition that will likely result in an emergency condition.

Air horns will be located at the Field Office Trailer and as necessary throughout the Site to ensure that emergency signals can be sounded and heard by site personnel at all active areas. A windsock will also be erected and visible to outside responders and site personnel to aid in the determination of wind direction.

A drawing illustrating windsock location, predetermined assembly points, locations of air horns, site fence lines, and other pertinent information will be posted during site work for site personnel references.

Personnel witnessing an emergency will sound the emergency signal (consecutive short screeches for ten (10) seconds from an air horn) to alert other site personnel. This signal will notify site personnel of an emergency situation, and require them to stop work activities, de-energize equipment; proceed to upwind predetermined assembly points; and, wait for further instruction from the Emergency Response Coordinator.

Two-way radios will be used on-site to communicate between the Field Office Trailer and active work areas. Radios will be used by the Emergency Response Coordinator to inform personnel of an emergency and to provide instructions. Site personnel carrying radios will be responsible for forwarding instruction to others in their work areas. Site personnel equipped with radios will be the Emergency Response Coordinator, Health and Safety Representative and Foremen. The Emergency Response Coordinator will have authority over all site communications and modes of transmission during an emergency.

Telephones located in the Field Office Trailer will be used to contact outside emergency response organizations to request assistance and to perform notifications.

A list of RAC personnel, organizations and agencies required to be notified in emergencies will be

placarded in the Field Office Trailer near the telephones (see Table 2-1). The U.S. Environmental Protection Agency Project Coordinator will be notified of the emergency as soon as possible.

2.1.3 Training

Site personnel, during construction, will receive a site orientation at the initiation of site activities. Site personnel will be required to read and sign the HASP, which includes a discussion of the Site's health and safety requirements, training requirements, physical and chemical hazards, and safety requirements, responsibilities and procedures incorporated in this Plan.

TABLE 2-1

EMERGENCY RESPONSE AND NOTIFICATION TELEPHONE NUMBERS

INJURY/ILLNESS REQUIRING AMBULANCE

911 or (732) 562-1100: Piscataway Police Department

911 or (908) 755-0700: South Plainfield Police Department

(Ambulance will be dispatched)

LOCAL POLICE

911 or (732) 562-1100: Piscataway Police Department

911 or (908) 755-0700: South Plainfield Police Department

FIRE/EXPLOSION

911 or (732) 562-1100: Piscataway Police Department

911 or (908) 755-0700: South Plainfield Police Department

(Piscataway Fire Department will be the first fire company dispatched)

MANDATORY NOTIFICATION FOR ALL EMERGENCIES

911 or (732) 562-1100: Piscataway Police Department

911 or (908) 755-0700: South Plainfield Police Department

Piscataway and South Plainfield Directors of Emergency Management (DEM) will be notified and emergency services will be dispatched.

Piscataway DEM - Richard Prosuk: (732) 752-4651

South Plainfield DEM - Mike Zushma: (908) 226-7718

To report fire involving hazardous materials:

911: Piscataway Police Department

911: South Plainfield Police Department

DEM will be notified and emergency services will be dispatched.

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If fire/explosion involves a release of unidentified material or hazardous material in excess of the published reportable quantity (per CERCLA, SARA Title III) also contact: (800) 424-8802 - USEPA/U.S. Coast Guard National Response Center.

HAZARDOUS MATERIAL SPILLS OR AIR RELEASE EVENT

To request assistance:

911 or (732) 562-1100: Piscataway Police Department

911 or (908) 755-0700: South Plainfield Police Department

(Fire, HazMat, Medical and Police will be dispatched)

If spill/release involves a release of unidentified material or hazardous material in excess of the reportable quantity (per CERCLA, SARA Title III) also contact: (800) 424-8802 - USEPA/U.S. Coast Guard National Response Center and the NJDEP Hotline (609) 292-7172

NJDEP HOTLINE FOR EMERGENCY SPILL RESPONSE

Hotline: (609) 292-7172

RAC PERSONNEL NOTIFICATION

1. Emergency Response Coordinator

Thomas M. Tomassetti (Code Environmental Services, Inc.): (732) 969-2701

2. RAC Health & Safety Representative

Brian Schortje (Code Environmental Services, Inc.): (732) 969-2701

3. RAC Health & Safety Manager

James F. Mulligan, Jr. (Code Environmental Services, Inc.): (732) 969-2701

4. RAC Project Manager

Richard J. Abramo (Code Environmental Services, Inc.): (732) 969-2701

TRUST PROJECT COORDINATOR NOTIFICATION

William J. Lee (de maximis, inc.): (908) 735-9315

EPA PROJECT COORDINATOR NOTIFICATION

Nigel Robinson: (212) 637-4394

NJDEP HOTLINE

(609) 292-7172

TRUST PROJECT COORDINATOR

William J. Lee (de maximis, inc.): (908) 735-9315 (work)

3.0 HAZARDOUS MATERIAL SPILL AND RELEASE PREVENTION AND RESPONSE

The actions listed below are provided as a general guide. Conditions may dictate changes in the sequence of actions and the addition, elimination or modification of specific steps.

3.1 PRE-RELEASE PLANNING

A pre-construction meeting will be held prior to mobilization of the field team to the Site. The pre-construction meeting will be held with Project Managers and appropriate support staff.

Representatives from local, state and federal agencies involved in the remedial action and local emergency response agencies will be invited to attend. The agenda of the meeting will be focused on health and safety, construction implementation, emergency response procedures, and contingency planning. Procedures for the community organizations and individuals to contact the project team will be outlined and documented, and distributed, as appropriate. Specifically a point-of-contact from the RAC will be introduced to the community and lines of communication will be outlined. In addition, points-of-contact will be established for the community organizations and emergency response services for the RAC to contact when performing work which may impact the community or in the event of an emergency, and this information will be appended to this Plan.

During construction, areas more likely for spills to occur include: the site support area, equipment lay down areas, active excavation areas, and decontamination pad.

During excavation activities, the potential to encounter organic vapor may exist, particularly at SB-74 and SB-76 where VOCs concentrations in soils are elevated. Field screening of soils will be accomplished using an organic vapor monitor. If organic vapors are detected above the action levels specified in Table 4-1, measures will be taken.

Since the excavated soils contain PCBs, dust monitoring will be performed and dust control measures will be taken to minimize release of dust.

At this time, it is not anticipated that external factors such as floods, power outages, heavy

snowstorms, etc. will require additional incident planning.

3.2 INSPECTION AND MONITORING

The areas where materials are stored and delivered during construction will be visually inspected on a periodic basis. Situations requiring repairs, corrective action or incident response will be documented immediately and action initiated to complete corrective action, response or notification according to this Plan. The inspections will be performed weekly, after a significant storm event during construction, or more frequently as Site conditions and activities dictate, by either the Project Manager or the their representative. The inspections will not require documentation unless corrective actions are required. The inspections, at a minimum, will include the following:

Erosion Control

- Silt Fence
- Hay Bales
- Stockpile Soil Protection

Spill Response

- Spill Response Equipment/Materials
- Spill Hotline Number Posted

General Environmental Protection

- Noise Control/Monitoring
- Dust Control/Monitoring
- Vapor Control/Monitoring
- Stormwater run-on/runoff from active areas
- Dewatering from active areas
- Housekeeping
- Staged Waste Material
- Periodic testing or calibration of equipment
- Decontamination

Security

- Site access control
- Active work area access control.

3.3 PREVENTIVE MAINTENANCE AND HOUSEKEEPING

General maintenance of the items listed above will be performed during the inspections. Any item that is deficient will be corrected. Construction operations will be maintained to prevent equipment or system failure that could lead to spills or releases. Preventive maintenance will include documenting and reporting on how the needs for repair or corrective action, identified during inspection and monitoring activities, were effected.

Housekeeping will apply to all construction work areas, including the temporary site facilities, lay down areas, storage trailers, staging areas, etc. Specifically, housekeeping includes:

- Storage of chemicals in a neat, orderly and secure fashion;
- Prompt removal of trash or small spillage;
- Regular refuse pickup and disposal;
- Maintenance of equipment
- Maintenance of decontamination pad in an orderly fashion
- Maintenance of excavation area in an orderly fashion.

3.4 SECURITY

The primary purposes for Site security controls are to:

- Prevent theft, vandalism, sabotage, and arson to the construction facilities;
- Prevent unauthorized people from entering the Site and becoming injured; and,
- Prevent the unauthorized removal of equipment or hazardous substances.

The primary security device is a chain link fence around the site. The fence will have two (2) 20-foot swing gates.

All visitors will be required to log in at the RAC's office trailer during construction activities. All visitors must be approved by the RAC or Trust Project Coordinator prior to entry to the Site. All visitors will be required to review and sign the HASP (or sign a waiver) prior to entering the Site.

Visitors will be informed about the applicable procedures and must wear any required protective clothing pursuant to the HASP prior to entry. Visitors will be escorted at all times within the work Site and no visitors will be allowed within an Exclusion Zone without proper OSHA training and protection.

3.5 GENERAL COUNTERMEASURES

Countermeasures will be undertaken by the RAC as the incident dictates. During construction the RAC has responsibility for undertaking or coordinating countermeasures. A list of emergency management equipment to be on-site during emergency response countermeasures is listed in Table 3-1.

3.5.1 Isolation

Upon observing a spill discharge or leakage, site personnel will immediately proceed to a safe distance upwind and direct other personnel away from the spill. Until determined otherwise, any unidentified spilled material will be assumed to be hazardous and response actions will proceed accordingly.

Sources of ignition within 500 feet of the spill will be extinguished immediately or de-energized (including vehicle engines). Personnel who have had contact with a spilled material will report immediately to the decontamination area and undergo decontamination consistent with the extent and nature of the contact.

TABLE 3-1 EMERGENCY MANAGEMENT EQUIPMENT

Protective Clothing

- Chemical Resistant, Disposal Suits (such as Tyvek and Saranex)
- Chemical resistant gloves
- Chemical resistant boots
- Hard hats
- Safety goggles
- Splash hoods/face shields

Protective Respiratory Equipment

- Full-face Level C respirators
- Fire blankets
- Sorbent booms and pads

Medical/First Aid Equipment

- Eye wash unit
- First aid kit
- Snake bite kit
- Bee sting kit

Communication Equipment

- Portable two-way radio equipment
- Air horns

Air Monitoring Equipment

- Flame Ionization Detector (FID)
- Vinyl Chloride detector tubes
- Dust/Particulate monitor
- Oxygen/Combustible Gas Indicator

3.5.2 Notification

The Emergency Response Coordinator will be notified as soon as possible of the location, size and nature of the spill. The Emergency Response Coordinator will notify the Piscataway Emergency Management Team, Fire Department, and local police departments and as conditions dictate, initiate remediation procedures and/or request outside assistance. Notifications will be made if a spill or accidental release involving a listed material is in excess of its reportable quantity, it occurs outside the confines of the project, or it occurs on-site and threatens the surrounding area. The Piscataway Communication System will notify the surrounding communities, if necessary.

If outside assistance is required, the Emergency Response Coordinator will designate an employee to meet the responders at the appropriate gate and advise them of any special precautions/procedures in effect. The responders will be directed to the location of on-site response supplies and to the spill area. The responders' vehicles will be directed over clean roads as practical in order to minimize contamination.

The Emergency Response Coordination will keep the Police Department informed of all developments during an emergency which may potentially impact public safety or health.

3.5.3 Rescue

If site personnel are unable to evacuate themselves from a spill area for any reason, their rescue will be the first priority of outside responders. The qualified responders will wear Level B protective equipment to perform rescues, unless otherwise directed by the Employee Response Coordinator or Health and Safety Representative.

3.5.4 Assessment/Characterization

If site personnel have identified a spill area, and the area is deemed an emergency, entry into the area will be performed in Level B protective equipment by qualified responders. Modifications to the personal protection level will be made in conjunction with the Emergency Response Coordinator

and Health and Safety Representative on the basis of identification of the material, air monitoring, etc.

3.5.4.1 Identification of Material. An attempt will be made to identify spilled material to the extent possible through container markings, physical properties of the material, and other available evidence. When doubt exists as to the identity of a material, it will be presumed to be hazardous until proven otherwise. In this case, emergency responders will be notified.

Actions are to be carried out as though all of the following hazard characteristics apply to the spilled material unless evidence indicates otherwise: flammable, water reactive, oxidizing, corrosive, and acutely toxic by skin contact or inhalation (material will be presumed to be volatile unless proven otherwise).

At the discretion of the emergency responders, the Emergency Response Coordinator or the Health and Safety Representative may collect samples of the spilled material and affected media for field testing and subsequent laboratory analysis. Field tests may include tests for pH, response by various instruments in the headspace of the sample container and tests for combustibility and reactivity.

An inventory of hazardous materials will be maintained on-site by the Health and Safety Representative. A complete inventory of materials and Material Safety Data Sheets (MSDS) associated with the operation and maintenance of the on-site groundwater treatment system is available in the treatment plant. A complete inventory of the materials and MSDS associated with the remedial action at the site will be maintained on-site by the Health and Safety Officer. MSDS for materials stored and used in bulk quantities for the groundwater treatment system and the remedial action are provided in Appendix A. Available references will be consulted for guidance regarding toxicity information if the spill material is identified.

3.5.4.2 Demarcation of Hazardous Material Spill Area. The spill area will be determined and documented, noting the extent of the contamination. The quantity of the material spilled will be estimated, and the basis for the estimate will be noted, (i.e., remainder in containers, direct observation of the spill in progress, etc.). The affected area will be marked with stakes and barrier tape or other means as appropriate.

3.5.4.3 Air Monitoring of Hazardous Material Spill Area. If identification reveals that the material can be detected by direct reading instrumentation, the Health and Safety Representative will arrange for air monitoring in the breathing zone of the responders; up and downwind of the spill area; and, at the site perimeter throughout the spill response. Results will be used to determine additional personnel protective actions utilizing the criteria applied to evaluate routine air monitoring as described in the HASP and Section 4.0 of this document.

3.5.5 Containment of Hazardous Material

3.5.5.1 Spread Prevention. Leaking containers will be immediately secured to prevent the flow of additional liquids out of the container. This step should be performed providing it can be done safely and without personal contact with the material.

Surrounding soil, booms, loose sorbents, sorbent pads, etc. will be used, as appropriate to berm around material subject to flow. Response materials will be chosen based on a minimum potential for incompatibility, such as spark resistant shovels or rakes. Emergency spill equipment will be available in the Support Zone in designated emergency equipment areas.

- 3.5.5.2 Vapor Suppression. Vapor suppressing foams and sorbent pads should be applied if it has been verified that the spill material is not incompatible with foams and pads. The foams and pads will be brought on-site by outside responders, if it is determined that they are required.
- 3.5.5.3 Liquid Solidification. Loose sorbents, pads, or pillows will be applied to solidify spilled liquids. Clay and inorganic sorbents will be used on materials not fully identified. Sorbents made from organic materials (grain husks, etc.) and neutralizers will not be applied to spilled materials not fully identified.

3.5.6 Clean-up of Spilled Hazardous Materials

The method of disposal of the spilled hazardous materials will be determined based on the identity of the spilled material. Unidentified overpacked material will be stored in a stable, inactive staging

area pending identification of the material. Once the materials have been characterized disposal options will be investigated. Procedures for waste characterization and management are outlined in the Waste Characterization, Transportation and Disposal Plan and Technical Specifications Section 02325 (Waste Characterization, Transportation, and Disposal).

3.5.7 Disposal of Spilled Hazardous Materials

The method of disposal of the spilled hazardous materials will be determined based on the identity of the spilled material. Unidentified overpacked material will be stored in a stable, inactive staging area pending identification of the material. Once the materials have been characterized, disposal options will be investigated. Procedures for waste characterization and management are outlined in the Characterization, Transportation and Disposal Plan and Technical Specifications Section 02325 (Waste Characterization, Transportation, and Disposal).

3.5.8 Restoration of Spill Area

Restoration of the spill area will be performed in accordance with the requirements of the regulatory agencies. The criteria for final clean-up will be based on the identity and quantity of the spilled material and the location of the spill.

3.5.9 Evacuation of Site Personnel

If an incident occurs during construction which necessitates evacuation, personnel will be directed to leave the area of the spill or release in an upwind direction and assemble at locations pre-determined by the Project Manager and Health and Safety Representative.

4.0 AIR RELEASE EVENTS

4.1 GENERAL

Air monitoring will be performed in accordance with the HASP. Air monitoring will include background monitoring prior to beginning work activities and continuous monitoring during work activities. A time-weighted average (TWA) will be calculated twice a day. Air monitoring will be conducted during activities when the potential for a release is the greatest. Air monitoring is a common method for determining if an air release event has occurred.

4.2 EXCURSION LEVELS

The following excursion levels will be used to characterize air release events as detected in the breathing zone and downwind of the work area in the exclusion zone. These excursion levels are stated in terms of the personal protective equipment upgrade and work stoppage levels as stated in the HASP.

Levels of contaminants for upgrade to higher levels of personnel protective equipment are summarized in Table 4-1.

4.3 AIR MONITORING OF AIR RELEASE EVENTS

If a work stoppage occurs, air monitoring efforts will be continued as circumstances dictate. Air monitoring will emphasize further characterization of the contaminants which triggered the work stoppage. Work will not be resumed until air monitoring results indicate that concentrations are below the referenced action levels.

TABLE 4-1
AIR MONITORING ACTION LEVELS

 \mathcal{O}

Instrument Function PID/OVM - Measures Total Organic Vapors	Measurement	Action
Conduct air monitoring for volatile organic compounds continuously during excavation activities.	1-5 ppm above background	Modified Level D required. Check for vinyl chloride with detector tubes, if sustained readings >5 min. Monitor air downwind of the excavation activities.
	>5 - 25 ppm	Upgrade to Level C. Apply vapor control measures. Continue air monitoring downwind of excavation activities and half the distance to the nearest residential/ commercial area.
	>25 ppm or >5 ppm at half the distance to the nearest resident/ commercial area.	Stop work. Continue air monitoring.
Dust/Particulate Monitor		
Initially, conduct air monitoring during excavation to establish baseline data. Air monitoring will be conducted continuously in the workers' breathing zone at the perimeter of the work area.	0 – 5 mg/M³ above background	Modified Level D required.
	>5 mg/M ³	Stop work. Implement dust control measures.
	or >0.15 mg/M³ at the downwind property boundary	
	·	

Instrument Function	Measurement	Action
Oxygen/Combustimeter (02/LEL) Measures ((LEL)	exygen Level (02) and	lower explosive limit
Conduct air monitoring for 0 ₂ /LEL when conditions exist where flammable vapors/gasses and/or oxygen deficiency or enrichment can occur. The planned work activities are unlikely to result in an O ₂ enrichment or deficiency.	0 ₂ = 20.9% 0 ₂ = 19.5 - 20.8%	Acceptable. Verify reasons for 02 depletion with appropriate air monitoring instrumentation before work continues. Utilize appropriate engineering controls/PPE once atmospheric contaminants have been verified.
This represents little hazard if the displacing gas is inert; if the displacing gas is toxic/flammable/reactive actually represents a change in the total air envelope of approximately 0.5% or 5,000 ppm concentrations represents a real hazard.	0 ₂ >20.9% - 22%	Verify reasons for 02 enrichment before entering area. Utilize appropriate engineering controls/PPE to control 02 enriched atmosphere.
	02 >22%	Leave area immediately; this atmosphere is extremely flammable. Notify PM or HSR for guidance.
Verify reasons for 02 depletion by conducting air monitoring with instruments that can measure suspected contaminants or that can confirm presence of (FID) contaminants (detector tubes or chemical specific real-time air monitors).	0 ₂ <19.5%	Leave area immediately; this atmosphere is oxygen deficient. Utilize appropriate engineering controls/PPE once atmospheric contaminants have been verified.
	LEL <10%	Acceptable conditions. Continue normal activity.
	LEL >10% <25%	Monitor continuously during work activities. Proceed with caution.
	LEL >25%	Leave immediately. Contact PM or HSR for guidance or venting and other safety measures.
* Note: Instruments must be calibrated according t	o manufacturer's recom	mendations.
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TABLE 4-1
AIR MONITORING ACTION LEVELS

Measurement	Action
1-5 ppm above background	Modified Level D required. Check for vinyl chloride with detector tubes, if sustained readings >5 min. Monitor air downwind of the excavation activities.
>5 - 25 ppm	Upgrade to Level C. Apply vapor control measures. Continue air monitoring downwind of excavation activities and half the distance to the nearest residential/ commercial area.
>25 ppm or >5 ppm at half the distance to the nearest resident/ commercial area.	Stop work. Continue air monitoring.
0 – 5 mg/M³ above background	Modified Level D required.
>5 mg/M³ or >0.15 mg/M³ at the downwind property boundary	Stop work. Implement dust control measures.
	1-5 ppm above background >25 ppm or >5 ppm at half the distance to the nearest resident/commercial area. 0 - 5 mg/M³ above background >5 mg/M³ at the downwind

Instrument Function	Measurement	Action
Oxygen/Combustimeter (02/LEL) Measures (LEL)	Oxygen Level (02) and	lower explosive limit
Conduct air monitoring for 02/LEL when conditions exist where flammable vapors/gasses and/or oxygen deficiency or enrichment can occur. The planned work activities are unlikely to result in an O2 enrichment or deficiency.	$O_2 = 20.9\%$ $O_2 = 19.5 - 20.8\%$	Acceptable. Verify reasons for 02 depletion with appropriate air monitoring instrumentation before work continues. Utilize appropriate engineering controls/PPE once atmospheric contaminants have been verified.
This represents little hazard if the displacing gas is inert; if the displacing gas is toxic/flammable/reactive actually represents a change in the total air envelope of approximately 0.5% or 5,000 ppm concentrations represents a real hazard.	0 ₂ >20.9% - 22%	Verify reasons for 0 ₂ enrichment before entering area. Utilize appropriate engineering controls/PPE to control 0 ₂ enriched atmosphere.
	02 >22%	Leave area immediately; this atmosphere is extremely flammable. Notify PM or HSR for guidance.
Verify reasons for 02 depletion by conducting air monitoring with instruments that can measure suspected contaminants or that can confirm presence of (FID) contaminants (detector tubes or chemical specific real-time air monitors).	0 ₂ <19.5%	Leave area immediately, this atmosphere is oxygen deficient. Utilize appropriate engineering controls/PPE once atmospheric contaminants have been verified.
	LEL <10%	Acceptable conditions. Continue normal activity.
	LEL >10% <25%	Monitor continuously during work activities. Proceed with caution.
	LEL >25%	Leave immediately. Contact PM or HSR for guidance or venting and other safety measures.
* Note: Instruments must be calibrated according t	o manufacturer's recom	mendations.

4.4 PERSONNEL PROTECTIVE EQUIPMENT DURING AIR RELEASE EVENT

The Health and Safety Representative will upgrade respiratory and other protective equipment requirements according to the criteria established in the HASP. The RAC will be notified so that all outside responders are made aware of the upgrade in respiratory and other protective equipment requirements.

5.0 FIRE/EXPLOSION

The actions listed below are provided as a general guide. Conditions may dictate changes in the sequence of actions and the addition, elimination, or modification of specific steps.

5.1 IMMEDIATE ACTION

Upon detecting a fire/explosion, site personnel will determine whether a fire is small enough to be readily extinguished with available portable fire extinguishers, or other available fire fighting methods. If it is judged that a fire is small enough to handle with available extinguishing media, site personnel will proceed to attempt to extinguish the fire provided that:

- Complicating factors such as risk of explosion, presence of gross contamination, or the potential for rapid spread does not exist.
- The fire can be approached from an upwind direction, and opposite to the direction of the fire's progress, and does not pose a risk to site personnel attending the fire.
- The proper fire extinguisher is readily available to combat the fire (Type ABC fire extinguisher will be provided in all work areas and on site vehicles).

5.2 NOTIFICATION

The Emergency Response Coordinator will be notified as soon as possible of the location, size, and nature of the fire/explosion. The Emergency Response Coordinator will notify the Piscataway Emergency Management Team (911), and as conditions dictate, initiate remediation procedures and/or request outside assistance.

If outside assistance is required, the Emergency Response Coordinator will appoint an employee to meet responders at the appropriate gate and advise them of any special precautions/procedures in effect. The responders will be directed to the location of the site response equipment and to the fire/explosion area. The responders' vehicle will be directed over clean roads to the extent possible to minimize contamination.

The outside Emergency Response Coordinator will keep the RAC informed of all developments during an emergency which may potentially impact public safety or health.

5.3 RESCUE

If site personnel are unable to evacuate themselves from a fire/explosion area, their rescue will be the first priority of emergency responders. The Emergency Response Coordinator will determine whether on-site resources are sufficient to perform the rescue or if the rescue must be delayed until the arrival of outside assistance.

Qualified responders will wear Level B protective equipment suitable for fire fighting to perform rescues, unless otherwise directed by the Health and Safety Representative. Level B equipment will minimally entail supplied air respirators and fire fighting turn out gear. Respirators and turn out gear will be supplied by outside emergency responders.

5.4 FIRE DURING NON-WORKING HOURS

In the event that the Piscataway Fire Department responds to a fire at the Site during non-working hours, the Fire Company will be instructed to notify the RAC Emergency Response Coordinator and both the Trust's and EPA's Project Coordinators.

5.

5.5 EMERGENCY RESPONSE COORDINATION

Upon the arrival of outside responders, the Emergency Response Coordinator will assist the Chief of the Piscataway Fire Department and the Piscataway Emergency Management Team. In the event the Piscataway Fire Department arrives on site prior to the Emergency Response Coordinator, all actions undertaken by the Fire Department will be defensive or be undertaken in Level B personal protection until the Emergency Response Coordinator can evaluate the emergency and advise outside responders otherwise.

5.6 PERSONAL PROTECTIVE EQUIPMENT DURING FIRE/EXPLOSION EMERGENCIES

The primary methods of protecting personnel from fire conditions will be by maintaining distance and by remaining upwind of the affected area. On the basis of conditions, the Emergency Response Coordinator and Piscataway Fire Chief will determine appropriate distances and the selection of personal protective equipment. For approach in close proximity to fire area, Level B or greater protective equipment suitable for fire fighting will be worn. Level B equipment will minimally entail supplied air respirators and fire fighting turn out gear.

5.7 DECONTAMINATION

At the conclusion of fire fighting activities, the Emergency Response Coordinator will determine to the extent practicable the nature of the contaminants encountered during the incident. If necessary, all outside responder's equipment and site equipment will be decontaminated using methods appropriate for the contaminants involved. Equipment not easily decontaminated will be labeled and isolated for further action, such as determining specific contaminants by wipe sampling, or awaiting the delivery of specific decontamination supplies. If necessary, wipe sampling will be performed on the surfaces of equipment used by outside responders so that the effectiveness of decontamination may be subsequently verified by the Health and Safety Representative and the Site

USEPA Representative. Responder's equipment may be requested to remain on-site pending receipt of wipe sample results.

6,0 VEHICULAR ACCIDENT'S INVOLVING HAZARDOUS MATERIALS

The actions listed below are listed as a general guide. Conditions may dictate changes in the sequence of actions and the addition, elimination, or modification of specific steps.

6.1 IMMEDIATE ACTION

Upon learning of a vehicular accident involving hazardous materials, site personnel will determine whether a vehicular accident which results in a fire/explosion is small enough to be readily extinguished with immediately available portable extinguishers or other available fire fighting methods. If it is judged that a fire is small enough to be extinguished with available extinguishing media, site personnel will attempt to extinguish the vehicular fire provided that:

- Complicating factors such as risk of explosion, presence of gross contamination, or potential for rapid spread does not exist.
- The fire can be approached from an upwind direction, and opposite to the direction of the fire's progress.
- The proper fire extinguisher is readily available to combat the fire (Type ABC fire extinguishers will be provided in all work areas and on site vehicles).

All personnel will be evacuated from the accident area. The Health and Safety Representative will account for all personnel evacuated from the area.

6.2 NOTIFICATION

The Emergency Response Coordinator will be notified as soon as possible of the location, size, and

nature of the vehicular accident. The Emergency Response Coordinator will notify the Piscataway Communication System of all on-site or off-site vehicular accidents involving hazardous materials as soon as possible. As conditions dictate, the Emergency Response Coordinator will initiate a site response.

If outside assistance is required, the Emergency Response Coordinator will appoint an employee to meet responders at the appropriate gate, advise them of any special precautions/procedures in effect. The responders will be directed to the location of site response equipment and to the accident scene. The responders' vehicle will be directed over clean roads to the extent possible to minimize contamination.

The Emergency Response Coordinator will keep the Piscataway Communication System informed of all developments during an emergency which may potentially impact public safety or health.

The NJDEP Hotline will be contacted in the event of a spill of hazardous materials.

6.3 RESCUE

If site personnel are unable to evacuate themselves from an accident area, their rescue will be the first priority of emergency responders. The Emergency Response Coordinator will determine whether on-site resources are sufficient to perform the rescue or if the rescue must be delayed until the arrival of outside responders.

Qualified responders will wear Level B protective equipment suitable to perform vehicular and/or fire fighting rescues, unless otherwise directed by the Health and Safety Representative. In the event of a vehicular fire/explosion, Level B equipment will minimally entail supplied air respirators and fire fighting turn out gear. Respirators and turn out gear will be supplied by outside emergency responders.

6.4 VEHICULAR ACCIDENT DURING NON-WORKING HOURS

In the event of a vehicular accident involving hazardous materials during non-working hours, Piscataway Communication System will be instructed to notify the RAC's Emergency Response Coordinator, the NJDEP Hotline.

6.5 EMERGENCY RESPONSE COORDINATION

Upon the arrival of outside responders, the Emergency Response Coordinator will coordinate with the leaders(s) of the outside responders to direct rescue and/or fire activities, as necessary. In the event outside responders arrive at the Site before the Site Emergency Response Coordinator, the actions of the outside responders will remain defensive or be undertaken in Level B personal protection until the Emergency Response Coordinator evaluates the emergency and advises otherwise.

6.6 PERSONAL PROTECTIVE EQUIPMENT

The primary method of protecting personnel from vehicle accident conditions such as fire/explosion will be by maintaining distance and by remaining upwind of the affected area. On the basis of conditions, the Emergency Response Coordinator, the HazMat Team and the Piscataway Fire Chief will determine appropriate distances and the selection of personal protective equipment. For approach in close proximity to the accident area, Level B or greater protective equipment suitable for fire fighting will be worn. Level B equipment will minimally entail supplied air respirators and fire fighting turn out gear.

6.7 DECONTAMINATION

At the conclusion of fire fighting and/or rescue activities, the Emergency Response Coordinator will determine to the extent practicable the nature of the contaminants encountered during the incident. If necessary, all outside responder's equipment and site equipment will be decontaminated using methods appropriate for the contaminants involved. Equipment not easily decontaminated will be labeled and isolated for further action, such as determining specific contaminants by wipe sampling, or awaiting the delivery of specific decontamination supplies. If necessary, wipe sampling will be performed on the surfaces of equipment used by outside responders so that the effectiveness of decontamination may be subsequently verified by the Health and Safety Representative. Responder's equipment may be requested to remain on-site pending receipt of wipe sampling results.

7.0 INJURIES/ILLNESSES REQUIRING OUTSIDE ASSISTANCE

7.1 FIRST AID

First aid trained site personnel will provide first aid treatment to personnel who become injured or ill at the Site.

Site personnel requiring non-emergency transport to medical facilities will be transported in accordance with the following:

- The injured or ill personnel will be transported in RAC's vehicles to appropriate medical facilities.
- Personnel will undergo appropriate decontamination prior to such transport, provided decontamination will not worsen injuries.

Site personnel will only be transported to medical facilities by site personnel if the injury or illness is minor (cuts, contusions, or other symptoms such as nausea or dizziness) and the possibility of complicating circumstances are limited. All other injuries or illnesses will result in site personnel being transported in an ambulance as described in Section 7.2.

7.2 MEDICAL CONDITIONS REQUIRING TRANSPORT BY AMBULANCE

The closest medical emergency center to the Site is Muhlenburg Hospital. The Emergency Center can be reached by turning right into Fleming Street from the Site entrance, proceed to South Washington Avenue, and make a right, then turn right into West 7th Street, right onto Clinton Avenue, left onto Sherman Avenue, left onto Plainfield Avenue, and right onto Randolph Road. The Emergency Center is located on the right.

This section applies to medical conditions that require ambulance transport in which the individual may be safely transported from the Exclusion Zone to the Support Zone by site personnel. The response procedure is as follows:

- Upon encountering a serious illness or injury which appears to require outside assistance, site personnel will notify the Emergency Response Coordinator.
- The Emergency Response Coordinator will contact the Piscataway Communication System who will contact the ambulance dispatcher and HazMat Team.
- The Emergency Response Coordinator will designate an employee to meet responders at the appropriate gate, escort them to the appropriate location and remain with them to assist as needed throughout the incident.
- While awaiting the arrival of the ambulance, trained site personnel will administer first aid, decontaminate and transport the victim to the Support Zone. Site personnel will <u>not</u> move injured employee(s) or attempt decontamination if it is suspected that these activities may complicate injuries.
- If the victim cannot be adequately decontaminated the victim will be covered with sheet wraps, blankets or other measures, such that ambulance personnel may load the victim aboard the ambulance, minimizing the spreading of any possible contamination.

7.3 MEDICAL CONDITIONS REQUIRING OUTSIDE RESPONDERS TO ENTER THE EXCLUSION ZONE

Medical data will be made available to the first aid squad and/or hospitals during transport. Emergency Response vehicles will be kept on clean roads/fill to the extent feasible.

The Health and Safety Representative will issue personnel protective equipment (PPE) to outside responders as appropriate. Issued PPE may include respirators, boots, gloves, coveralls, or hard hats. An air monitoring technician will be assigned to escort responders, provide air monitoring coverage, and will report readings to the Health and Safety Representative. Outside responders who have not been previously trained in the use of respiratory protection will not be allowed in areas where such protection is necessary, as determined by direct-reading air monitoring instruments. In such a case that on-site response is necessary and outside responders are not able to enter the area, they will be able to lend assistance to first-aid trained site personnel via two-way radio.

Decontamination of personnel and equipment will be performed only if justified after consideration of the nature of the contaminants and the severity of the injury, as decided by the Health and Safety Representative.

APPENDIX A

MSDS

GROUNDWATER TREATMENT SYSTEM

MATERIAL SAFETY DATA SHEET

Conforms to 29 CFR 1910.1200 (OSHA HAZARD COMMUNICATION STANDARD)

ATHEA LABORATORIES, INC. P.O. Box 23926 Milwaukee, WI 53223

PRODUCT NAME: SEWER ANTI-FOAM CONCENTRATE

EMERGENCY TELEPHONE NUMBERS: (414)354-6417

CHEMTREC (800) 424-9300

PHODUCT IDENTIFICATION

NFPA HAZARD IDENTIFICATION SYSTEM

Trade Names and Synonyms:

SEWER ANTI-FOAM CONCENTRATE

Chemical Name/Synonyms:

N/A

Chemical Family:

AQUEOUS EMULSION OF SILICONE FLUID

Formula: MIXTURE

HAZARD RATING 4 - Extreme HEALTH 3 - High FLAMMABILITY 2 - Moderate 0 REACTIVITY 1 - Slight 0 - Insignificant

SECTION IL PHAZARDOUS INGRECIENTS

Substance

Approx.

OSHA PEL

ACGIH

CARCINOGENICITY

ČAS

TLV

NPT IARC OSHA

<u>No.</u>

CONTAINS NO HAZARDOUS COMPONENTS AS LISTED IN 29 CFR 1900.1000 OR OTHER PERTINENT SECTIONS OF OSHA REGULATIONS

Boiling Point (°F): 212

Vapor Pressure (mm Hg): 17

Vapor Density (air = 1): 0.6

Solubility in water: SOLUBLE 5

Specific Gravity: 1.01

% Volatile (volume %): >80

.Evaporation Rate (ether = 1) > 1.0

pH: 7.8

Appearance and Odor: OPAQUE, WHITE LIQUID, MILD ODOR

LES SECTION IV EIRE AND EXPLOSION HAZARD DATA

Flash Point (°F): NONE

Flammable Limits in air (volume %)

Upper: N/A

Lower: N/A

Extinguishing Media: WATER, FOAM, CARBON DIOXIDE, DRY CHEMICAL.

Special Fire Fighting Procedure: FIREFIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS AND

IMPERVIOUS CLOTHING.

Unusual Fire and Explosion Hazard: NONE

SECTION V - REACTIVITY DATA

Stability: STABLE

Conditions to Avoid: NONE

Incompatibility: NONE

Hazardous Decomposition Products: THERMAL DECOMPOSITION MAY PRODUCE OXIDES OF CARBON AND

SILICONE.

Hazardous Polymerization: WILL NOT OCCUR

Conditions to Avoid: NONE

DATE OF ISSUE: May 4, 1995

PRODUCT NAME: SEWER ANTI-FOAM CONCENTRATE

EFITONIVE HEATTH DOZGODAYA

Threshold Limit Value (TLV): NOT ESTABLISHED

Primary Routels) of Exposure: EYE CONTACT, INGESTION

Effects of Overexposure: EYES: MILD IRRITATION INGESTION: NAUSEA, VOMITING.

Emergency and First Aid Procedures: EYES: FLUSH EYES AND UNDER EYELIDS WITH PLENTY OF COOL WATER FOR AT LEAST 15 MINUTES, OBTAIN MEDICAL ATTENTION. INGESTION: GIVE AFFECTED PERSON SEVERAL GLASSES OF WATER, DO NOT INDUCE VOMITING, OBTAIN MEDICAL ATTENTION. NEVER GIVE ANYTHING SY MOUTH TO AN UNCONSCIOUS PERSON.

SECTION VIK SEID OF BEAVERSONE OF IN

Steps to be taken if Material is Released or Spilled: ABSORB SPILL WITH SAND OR FULLER'S EARTH. SWEEP UP AND PLACE IN AN APPROPRIATE CHEMICAL WASTE CONTAINER, FLUSH AREA WITH WATER. Waste Disposal Method: CONSULT LOCAL ENVIRONMENTAL AUTHORITIES.

AT A SECTION VIII SPECIAL PROTECTION INFORMATION F

Respiratory Protection: NOT REQUIRED Ventilation: Local Exhaust: NOT REQUIRED

Mechanical: NOT REQUIRED -

Protective Gloves: RUBBER GLOVES

Eye Protection: CHEMICAL GOGGLES

Other Protective Equipment: EMERGENCY SHOWER AND EYE WASH STATION

SECTION X SPECIAL PROTECTION

Precautions to be Taken in Handling or Storage: STORE IN A COOL, DRY PLACE. KEEP CONTAINER TIGHTLY

CLOSED WHEN NOT IN USE.

Other Precautions: KEEP OUT OF REACH OF CHILDREN

SECTION X TREGULATORY INFORMATION

DOT Proper Shipping Name: NONE

DOT HAZARD Class: NONE

DOT ID Number: NONE

DOT Packaging: Group: NONE

SARA/TITLE III - CERCLA List of Hazardous Substances and Reportable Quantities (40 CFR 304.4): This product does not contain an ingredient(s) listed as a hazardous ingredient for Emergency Release Notification under section 304.

SARA/TITLE III - List of Extremely Hazardous Substances for Emergency Planning and Notification (40 CFR 300 & 305): This product <u>does not</u> contain an ingredient(s) listed as an extremely hazardous substance (EHS) for Emergency Planning under sections 301-303 and for Emergency Release Notification under section 304.

SARA/TITLE III - List of Toxic Chemicals subject to Release Reporting (Community Right to Know) (40 CFR 372): This product does not contain an ingredient(s) listed as a toxic chemical for Annual Release Reporting Requirements under section 313.

THE SECREMENT CONTINUED HEREN IS BASED ON CATA CONSIDERS ACCURATE, HOWEVER, NO WARRANTY IS EXPRESSED OR MINIED RECAROND THE ACCURACY OF THIS DATA ON THE RESULTS TO BE CONTINUED FROM THE WIST THEREOF ATHER LASSICATIONS, AND PARTIES CAUSED BY THE MATERIAL SHOP OF THIS DATA OR THI

MSDS NUMBER : M32415

01-02-95 MSDS DATE

PRODUCT NAME: CAUSTIC SODA LIQUID (ALL GRADES)

(For specific products - see Section XI)

24 HOUR EMERGENCY PHONE: (302) 834-4558

I. PRODUCT IDENTIFICATION

HMIS HAZARD RATINGS

FIRE HÁZÁRD REACTIVITY HEALTH HAZARD Based on the National Paint & Coatings Association HMIS rating system.

SARA/TITLE III HAZARD CATEGORIES (See Section X)

Immediate (ACUTE) Health: YES Delayed (Chronic) Health: NO Reactive Hazard:

- Sudden Release of Pressure: NO .

Fire Hazard: NO

MANUFACTURER'S: Occidental Chemical Corporation

Customer Service, Occidental Tower, P O Box 809050, Dallas, Texas 75380 Te lephone NAME AND (1-800-752-5151)

ADDRESS

CHEMICAL NAME: Sodium Hydroxide CAS NUMBER: 1310-73-2

SYNONYMS/COMMON NAMES: Sadium Hydraxide: NaOH

CHEMICAL FORMULA: HOEN

DOT PROPER SHIPPING NAME: Sodium Hydroxide Solution

DOT HAZARD CLASS:

DOT IDENTIFICATION NUMBER: UN1824

DOT PACKING GROUP:

DOT HAZAROUS SUBSTANCE: RQ 1000 lbs. (Sodium Hydroxide)

DOT MARINE POLLUTANT: NA

ADDITIONAL DESCRIPTION REQUIREMENT:

RD For relevant; informetion found or not available RD....! No relevent; insumetion found or not numitable fours a Composite Exposure timit

- Tourise informate Exposure timit

- Tourise information was prepared by competent technical personal as edge. Was washing as prepared by competent technical personal as edge. Was washing to Cunanty, Exposis or invited is made agg. emattential net intended to be all-individue as to the memor and conditional salesy or performance considerations, point to questions regarding sale heading and use procedures, sale here.

***Manual Compositions for use are intended as, and nething herein

M32415 MSDS NUMBER: PRODUCT NAME:

CAUSTIC SODA LIQUID (ALL GRADES)

01-02-1995

IL HEALTH HAZARD INFORMATION

EMERGENCY AND FIRST AID PROCEDURES

EYES:

OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN GET MEDICAL ATTENTION; IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of entire surface. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:

IMMEDIATELY wash with plenty of water for at least 15 minutes. Remove contaminated clothing and footwear. Wash clothing before reuse and discard footwear which cannot be decontaminated. MEDICAL ATTENTION IMMEDIATELY.

INHALATION:

Remove to fresh air. If breathing is difficult have trained person administer oxygen. If respiration stops, give mouth-to-mouth resuscitation. GET MEDICAL ATTENTION.

INGESTION:

NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep airway clear. GET MEDICAL ATTENTION IMMEDIATELY.

ROUTES OF EXPOSURE

รสงใช้ เสษากษณ์ ค.ศ. 🕡 🧸 INHALATION:

Breathing dust, mist or spray may cause damage to the upper respiratory tract and lung tissue proper which could produce chemical pneumonia, depending upon severity of exposure.

Contact produces severe burns and destroys tissues. Irritation may be delayed.

EYE CONTACT:

Causes severe burns that result in damage to the eyes and possibly blindness.

INGESTION:

Causes severe burns to mucous membranes of the mouth, throat. esophagus, and stomach.

EFFECTS OF OVEREXPOSURE

ACUTE:

Corrosive to all body tissues by all routes of exposure. The effect of local dermal exposure may consist of multiple areas of superficial destruction of the skin or of primary irritant dermatitis. Similarly, inhalation of dust, spray, or mist may result in varying degrees of irritation or damage to the respiratory tract tissues and an increased susceptibility to respiratory illness.

CHRONIC:

No known chronic effects.

MSDS NUMBER: PRODUCT NAME :

M32415

CAUSTIC SODA LIQUID (ALL GRADES)

01-02-1995

II. HEALTH HAZARD INFORMATION (Continued)

TOXICOLOGY DATA:

Caustic soda is a corresive material.

<u>Sodium Hydroxida:</u> Acute dermal LD50

(rabbit)

· 1350 mg/kg

Human Dermal Exposure

Regardless of concentrations, the severity of damage and extent of its irreversibility increases with length of contact time. Prolonged contact with sodium hydroxide solutions of => 1% can cause a high degree of tissue destruction. The latent period, following skin contact during which no sensation of irritation occurs, varies from several hours for 0.4.- 4% solution to 3 minutes with concentrations of 25% or greater.

ND

48,50-91

9-51.50

NO 0-1.30

0-0.30

MSDS NUMBER: M32415 PRODUCT NAME: CAUSTIC SODA LIQUID (ALL GRADES)

III. IMPORTANT COMPONENTS

CAS NUMBER / NAME

7732185 Water

EXPOSURE LIMITS

PEL:Not Established TLV:Not Established

COMMON NAMES:

Listed On(List Legend Below):

1310732 Sodium hydroxide (Na(OH))

EXPOSURE LIMITS

PEL:2 mg/m3. Ceiling TLV:2 mg/m3, Ceiling

COMMON NAMES:

--- CAUSTIC SODA

Listed On (List Legend Below): 13 18 21

7647145 Sodium chioride (NaCi)

EXPOSURE LIMITS

PEL:None established TLV:None established

COMMON NAMES:

SALT

Listed On(List Legend Below):

7775099 Chioric acid, sodium salt

EXPOSURE LIMITS

PEL:Not Established TLV:Not Established

COMMON NAMES:

SODIUM CHLORATE

Listed On (List Legend Below):

All components of this product that are required to be on the TSCA inventory are listed on the inventory:

4 93.3634 Not Itsted as carcinogen - IARC, NTP, OSHA

LIST LEGEND

12 PA HAZARDOUS SUBSTANCE 18 NY HAZARDOUS SUBSTANCES 21 NJ SPECIAL HEALTH HAZ SUB

13 PA ENVIROMENTAL HAZ SUBSTANCE 19 PA REQUIREMENT- 3% OR GREATER 23 NJ REQUIREMENT- 1% OR GREATER

PERCENTAGE

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VOL

VOL

MSDS NUMBER: PRODUCT NAME: M32415 CAUSTIC SODA LIQUID (ALL GRADES)

01~02-1995

IV. FIRE AND EXPLOSION DATA

FLASH POINT: NA' .

AUTOIGNITION TEMPERATURE: Nonflammable

FLAMMABLE LIMITS IN AIR. % BY VOLUME- UPPER:

LOWER: NA

EXTINGUISHING MEDIA:

This product is not combustible. Foam, carbon dioxide or dry chemical may be used where this product is stored.

SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing. Avoid direct contact of this product with water as this can cause a violent exothermic reaction.

UNUSUAL FIRE AND EXPLOSION HAZARD:

Direct contact with water can cause a violent exothermic reaction. See Reactivity Section.

V. SPECIAL PROTECTION

VEHTILATION REQUIREMENTS:

Special ventilation is not required under normal use. Use local exhaust ventilation where dust, mist, or spray may be generated.

NOTE: Where carbon monoxide or other reaction products may be generated, special ventilation may be required.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT.

RESPIRATORY:

Respiratory protection is not required under normal use. Use NIOSH/MSHA approved respirators where dust. mist, or spray may be generated.

EYE:

Wear chemical safety coggles plus full face shield to protect against splashing (ANSI Z87.1).

GLOVES:

Wear chemical resistant gloves such as natural or butyl rubber. Gloves may be decontaminated by washing with mild soap and water.

OTHER CLOTHING AND EQUIPMENT:

Impervious protective clothing and chemically resistant safety shoes should be worn to minimize contact. Wash contaminated clothing with soap and water and dry before reuse... Emergency shower and eyewash facility should be in close proximity. (ANSI Z358.1).

MSDS NUMBER: M32415 PRODUCT NAME: CAUSTIC SODA LIQUID (ALL GRADES) 01-02-1995

VI. PHYSICAL DATA

	Co	ncentra	+ 10m. h	/eight	<u>4</u>		
PHYSICAL STATE: LIQUID	10	20	30	<u>40</u>	50		
BOILING POINT.@ 760 mm Hg. °C:	110	113	119	129	144		
FREEZING POINT, °C:	- 10	-32	Ø	15	. 12		
VAPOR PRESSURE, mm Hg @ 60°C:	135	110	76	46.	13		
SPECIFIC GRAVITY @15.6°C/15.6°C:	1.11	1.22	1.33	1.43	1.53		
DENSITY, 15s/gallon @ 15.6°C/15.6°C:	9.27	, 10.20	11.11	11.97	12.76		
SOLUBILITY IN H2O. % by Wt.		.comple	tely so	luble.			
VAPOR DENSITY (Air = 1):	Not Ap	plicabl	e				
APPEARANCE AND ODOR:	ear Tiq	uid wit	h no di	st inct	odor		
ODOR THRESHOLD (PPM): Not Available							
EVAPORATION RATE: Not Known							
COEFFICIENT WATER/OIL DISTRIBUTION:	Not Av	ailable	•	_			
р н : 7.	5% solu	ition he	s pH 14				

VII. REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY:

Under normal conditions, this product is stable.

INCOMPATIBILITY:

See Handling and Storage Section. Avoid contact with water. This product may be added slowly to water or acids with dilution and agitation to avoid a Violent exothermic reaction. When handling this product, avoid contact with aluminum, tin, zinc, and alloys containing these metals. Do not mix with strong acids without dilution and agitation to prevent violent or explosive reaction. Avoid contact with leather, wool, acids, organic halogen compounds and organic nitro compounds.

HAZARDOUS DECOMPOSITION PRODUCTS:
None known.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION:
Material is not known to polymerize.

MSDS NUMBER: PRODUCT NAME: M32415

CAUSTIC SODA LIQUID (ALL GRADES)

VIII. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS:

Do not get into eyes. on skin, on clothing.

Avoid breathing dust, mists, or spray.

Do not take internally.

Use with adequate ventilation and wear respiratory protection when exposure to dust, mist or spray is possible.

When handling, wear chemical splash goggles, face shield, rubber gloves and protective clothing.

gloves and protective clothing.
Wash thoroughly after handling or contact - exposure can cause burns which are not immediately painful or visible.

Keep container closed.

Product can react violently with water, acids, and other substances - read Special Mixing and Handling Instructions below carefully before using.

Product is corrosive to tink aluminum, zinc and alloys containing these metals, and will react violently with these metals in powder form.

Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures (ANSI Z117.1).

SPECIAL MIXING AND HANDLING INSTRUCTIONS

Product can react violently with water. "Considerable heat is generated when product is mixed with water. Therefore, when making solutions always carefully follow these steps:

ALWAYS wear ALL protective clothing described above. NEVER add water to product. ALWAYS add product - with constant stirring - slowly to sunface of lukewarm (80-100°F) water. to assure product is being completely dissolved as it is added.

If product is added too rapidly, or without stirring, and becomes concentrated at bottom of mixing vessel, excessive heat may be generated, resulting in DANGEROUS boiling and spattering, and a possible IMMEDIATE AND VIOLENT ERUPTION of highly caustic solution.

NOTE: Never add more product than can be absorbed by solution while maintaining temperature below 200°F (@ sea level) to pravent boiling and spattering.

Product can react EXPLOSIVELY with acids, aldehydes, and many other organic chemicals - when mixing product with solutions containing such chemicals, follow all of above mixing instructions, and add product very gradually, while stirring constantly.

ALWAYS empty and clean containers of all residues before adding product, to avoid possible EXPLOSIVE reaction between product and unknown residue.

Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal, state, and DOT regulations. All residual caustic soda should be removed from containers prior to disposal.

IX. ENVIRONMENTAL PROCEDURES

CAUSTIC SODA LIQUID (ALL GRADES) PRODUCT NAME:

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Leaks should be stopped. Spills should be contained and cleaned up immediately. Spills should be removed by using a vacuum truck. Neutralize remaining traces of material with any dilute inorganic acid such as hydrochloric, suffuric, nitric, phosphorte, and acetic acid. The spill area should then be flushed with water followed by liberal covering of sodium The spill area should then be bicarbonate. All clean-up material should be removed and placed in approved containers, labeled and stored in a safe place to await proper treatment or disposal. Spills on areas other than payement, e.g., dirt or sand, may be handled by removing the affected soils and placing in approved containers. Persons performing clean-up work should wear adequate personal protective equipment and clothing. Spills or releases should be reported, if required, to the appropriate local, state and federal regulatory agencies.

violentily with react CAUTION: Caustic ಕಂಡಾ עוצות acids ಫಗರ water.

WASTE DISPOSAL METHOD:

The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable federal, state, and local health and environmental requisitions. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible federal, state, and local agencies receive proper notification of spill and disposal methods.

X. ADDITIONAL INFORMATION

OSHA Standard 29CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material sheets, training and access to written records. We you, and it is your legal duty to, make all safety, data request that Information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III hazard categories for this product are indicated in Section I. If the word "YES" appears next to any category, this product may be reportable by you under the requirements of 40 CFR Part 370. Please consult those regulations for details.

MSDS NUMBER: M32415
PRODUCT NAME: CAUSTIC SODA LIQUID (ALL GRADES)

XI. PREPARATION INFORMATION

For additional Non-Emergency health, safety, or environmental information telephone 201-589-0700 or write to:

KUEHNE CHEMICAL CO., INC.

86 Hackensack Ave. S. Kearny, NJ 07032 (201) 589-0700

This Material Safety Data Sheet (MSDS) covers the following materia

DIAPHRAGM 50% RAYON 18% DIAPHRAGM 73% RAYON 25% SOLUTION MEMBRANE 50% PURIFIED 50% RAYON 50% DIAPHRAGM 9% DIAPHRAGM DIAPHRAGM 21% DIAPHRAGM 25% DIAPHRAGM 30% DIAPHRAGM 18% DIAPHRAGM DIAPHRAGM RAYON 15% RAYON 17% RAYON 10% RAYON 14% RAYON 30% RAYON 20% DIAPHRAGM 35% DIAPHRAGM 28% DIAPHRAGM 20% DIAPHRAGM 45% MEMBRANE 30% LIQUID DIAPHRAGM 24% 601 50 1W

MSDS NUMBER: PRODUCT NAME:

M324 (5

CAUSTIC SODA LIQUID (ALL GRADES)

01-02-1995

WARNING LABEL INFORMATION

DANGER-SIGNAL WORD:

STATEMENT OF HAZARDS:

CAUSES SEVERE BURNS TO SKIN! EYES AND MUCOUS MEMBRANES.
CONTACT WITH EYES CAN CAUSE PERMANENT EYE DAMAGE.
INHALATION OF DUST. MIST. OR SPRAY CAN CAUSE SEVERE LUNG DAMAGE.
CAN REACT VIOLENTLY WITH WATER. ACIDS. AND OTHER SUBSTANCES.

PRECAUTIONARY STATEMENTS:

Do not get into eyes, on skin, on clothing. Avoid breathing dust, mist, or spray.

Do not take internally.

Use with adequate ventilation and wear respiratory protection when exposure to dust, mist, or spray is possible.
When handling, wear chemical splash googles, face shield, rubber

gloves and protective clothing.

Wash thoroughly after handling or contact - exposure can cause burns which are not immediately painful or visible.

Keep container closed. Product can react violently with water, acids, and other substances

- read Handling and Storage instructions carefully before using. Product is corrosive to tin, aluminum, zinc, and alloys containing these metals, and will react violently with these metals in powder form.

Hazardous carbon monoxide gas can form upon contact with food and beverage products in enclosed spaces and can cause death. Follow appropriate tank entry procedures.

FIRST AID:

FOR EYES:

OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN GET MEDICAL ATTENTION. IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of entire surface. Washing eyes within several seconds is essential to achieve maximum effectiveness. GET MEDICAL ATTENTION IMMEDIATELY.

FOR SKIN:

IMMEDIATELY wash with plenty of water for at least 15 minutes. Remove contaminated clothing and footwear. Wash clothing before reuse and discard footwear which cannot be decontaminated. GET MEDICAL ATTENTION IMMEDIATELY.

IF INHALED:

Remove to fresh air. If breathing is difficult, have trained person administer oxygen. If respiration stops, give mouth-to-mouth resuscitation. GET MEDICAL ATTENTION.

IF SWALLOWED:

NEVER GIVE ANYTHING NY MOUTH TO AN UNCONSCIOUS PERSON. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several plasses of milk. If vomiting occurs spontaneously, keep already clear. GET MEDICAL ATTENTION If vomiting IMMEDIATELY.

IN CASE OF: SPILL OR LEAK:

Leaks should be stopped. Spills, after containment, should be shoveled up or removed by vacuum truck (if liquid) to chemical waste area. Neutralize residue with dilute acid, flush spill area with water followed by liberal covering of sodium bicarbonate. Dispose of wash water and spill by-products according to federal, state, and local regulations.

MSDS NUMBER: M32415

PRODUCT NAME: CAUSTIC SODA LIQUID (ALL GRADES)

XI. PREPARATION INFORMATION

For additional Non-Emergency health, safety, or environmental information telephone 201-589-0700 or write to:

KUEHNE CHEMICAL CO., INC.

86 Hackensack Ave. S. Kearny, NJ 07032 (201) 589-0700

This Material Safety Data Sheet (MSDS) covers the following materia

	DIAPHRAGM 50%			RAYON 25%
<u> </u>	RAYON 18%	₹	, ;	SOLUTION 50%
-	DIAPHRAGM 73%	•	` - '	MEMBRANE 50%
	PURIFIED 50%		·	RAYON 50%
-	DIAPHRAGM 9%	_	-	DIAPHRAGM 19%
	DIAPHRAGM 21%		-	DIAPHRAGM 25%
-	DIAPHRAGM 30%		-	DIAPHRAGM 18%
- '	DIAPHRAGM 10%	•	-	DIAPHRAGM 15%
_	RAYON 15%		'	RAYON 17%
-	RAYON 10%		-	RAYON 14%
	RAYON 30% .		_	RAYON 20%
-	DIAPHRAGM 20%	_	_	DIAPHRAGM 35%
	DIAPHRAGM 45%	_	_	DIAPHRAGM 28%
_	MEMBRANE 30%		,	LIQUID
-	DIAPHRAGM 24%	•	_	601
-	60 IW .			

M32415

CAUSTIC SODA LIQUID (ALL GRADES)

WARNING LABEL INFORMATION (Continued)

HANDLING AND STORAGE:

Considerable heat is generated when product is mixed with water. Therefore, when making solutions always carefully follow these steps:

ALWAYS wear ALL prescribed protective clothing. NEVER add water to product. ALWAYS add product - with constant stirring - slowly to surface of lukewarm (80-100°F) water, to assure product is being completely dissolved as it is added.

If product is added too rapidly, or without stirring, and becomes concentrated at bottom of mixing vessel, excessive heat may be generated, resulting in DANGEROUS boiling and spattering, and a possible IMMEDIATE AND VIOLENT ERUPTION of highly caustic solution.

NOTE: Never add more product than can be absorbed by solution while maintaining temperature below 200°F (@ sea level) to prevent boiling and spattering.

Product can react EXPLOSIVELY with acids, aldehydes, and many other organic chemicals - when mixing product with solutions containing such chemicals, follow all of above mixing instructions, and add product very gradually, while stirring constantly.

ALWAYS empty and clean containers of all residues before adding product, to avoid possible EXPLOSIVE reaction between product and unknown residue.

Returnable containers should be shipped in accordance with supplier's recommendations. Return shipments should comply with all federal: state, and DOT regulations. All residual caustic soda should be removed from containers prior to disposal.

DISPOSAL:

The materials resulting from clean-up operations may be hazardous wastes and, therefore, subject to specific regulations. Package, store, transport, and dispose of all clean-up materials and any contaminated equipment in accordance with all applicable federal, state, and local health environmental regulations. Shipments of waste materials may be subject to manifesting requirements per applicable regulations. Appropriate disposal will depend on the nature of each waste material and should be performed by competent and properly permitted contractors. Ensure that all responsible federal, state, and local agencies receive proper notification of disposal.

INFORMATION REQUIRED BY FEDERAL, STATE OR LOCAL REGULATIONS:

CAS# NAME 7732185 Water

1310732 Sodium hydroxide (Na(QH))

7647145 Sodium chloride (NaCl)

7775099 Chloric acid. sodium salt

HMIS RATING SYSTEM: HEALTH 3

FLAMMABILITY 0

REACTIVITY 2

FOR INDUSTRIAL USE ONLY

LABEL

113M32415

Miracle Chemical Company

DIV. OF W. R. NEUMANN CO. 11518 HIGHWAY #33 * FARMINGDALE,NJ 07727 (908) 938-9110 * FAX (908) 938-6630

MATERIAL SAFETY DATA SHEET

MSDS NUMBER

: M7745

MSDS DATE

: 01-19-90

PRODUCT NAME: SODIUM HYPOCHLORITE

24 HOUR EMERGENCY PHONE: 1-800-582-7414

PRODUCT IDENTIFICATION

HMIS HAZARD RATINGS

HEALTH HAZARD

FIRE HAZARD O

REACTIVITY 2

Based on the National Paint & Coatings Association HMIS rating system

SARA/TITLE III HAZARD CATEGORIES (See Section X)

Immediate (Acute) Health: YES Delayed (chronic) Health: NO

Reactive Hazard: YES

Sudden Release of Pressure: NO

Fire Hazard: YES

Kuehne Chemical Co. Inc. **MANUFACTURER'S:**

NAME AND

: 86 Hackensack Avenue

Telephone

ADDRESS

South Kearny, New Jersey 07032

(201)-589-0700

CAS NUMBER: 007681-52-9

Hypochlorous Acid CHEMICAL NAME:

Sodium Salt

SYNONYMS/COMMON NAMES: Chlorine Bleach,

Soda Bleach

CHEMICAL FORMULA: NAOC1"

DOT PROPER SHIPPING NAME: Hypochlorite Solution

DOT HAZARD CLASS: Corrosive Material

DOT I.D. NUMBER: UN1791

DOT HAZARDOUS SUBSTANCE:

Sodium Hypochlorite RQ 100#

II. HEALTH HAZARD INFORMATION

EMERGENCY AND FIRST AID PROCEDURES

EYES: OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY AND THEN SEEK MEDICAL ATTENTION. IMMEDIATELY flush eyes with a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. Washing eyes within one (1) minute is essential to achieve maximum effectiveness. SEEK MEDICAL ATTENTION IMMEDIATELY.

SKIN: SEEK MEDICAL ATTENTION IMMEDIATELY. Flush thoroughly with cool water under shower while removing contaminated clothing and shoes. CONTINUE TO FLUSH UNTIL MEDICAL ATTENTION ARRIVES. Discard non-rubber shoes. Wash clothing before reuse.

INHALATION: Remove to fresh air. If breathing is difficult have trained person administer oxygen. If respiration stops give mouth-to-mouth resuscitation. GET IMMEDIATE MEDICAL ATTENTION.

INGESTION: NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. If swallowed DO NOT INDUCE VOMITING. Give large quantities of milk or gelatin solution. If these are not available give large quantities of water. If vomiting occurs spontaneously, keep airway clear and give more milk, gelatin solution or water. Avoid vomiting, lavage or acidic antidotes. GET MEDICAL ATTENTION IMMEDIATELY.

NOTE TO PHYSICIAN: Sodium Hypochlorite is an alkaline corrosive. For exposure by ingestion do not , use emesis, lavage or acidic antidotes. Dilute immediately by giving milk, melted ice cream, beaten egg white, starch paste or antacids such as milk of magnesia, aluminum hydroxide gel or magnesium trisilicate gel. Avoid sodium bicarbonate because of carbon dioxide release. Sodium thiosulfate solution may prove beneficial by reducing unreacted material.

MSDS NUMBER M7745 PRODUCT NAME: SOOIUM HYPOCHLORITE

II. HEALTH HAZARD INFORMATION (CONTINUED)

ROUTES OF EXPOSURE

INHALATION: Inhalation of hypochloris acid fumes may cause severe respiratory tract irritation and pulmonary edema.

SKIN: Skin contact may cause severe irritation and burns.

EYE CONTACT: Eye contact may cause severe imitation, burns and/or corrosion.

INGESTION: Ingestion may cause pain and inflammation of the mouth and digestive system, burns and perforation of the esophagus or stomach, vomiting, circulatory collapse, confusion, delirium and coma.

EFFECTS OF OVEREXPOSURE

ACUTE: Corrosive and strongly irritating to the eyes, skin and respiratory tract. Inhalation of fumes may cause pulmonary edema. Ingestion may cause burns to the mouth and digestive tract and abdominal distress.

CHRONIC: No data

TOXICOLOGY DATA: The toxicity and corrosivity of Sodium hypochlorite is a function of concentration.

Industrial grades of higher concentrations than household bleach are more toxic and corrosive.

Pentahydrate: 45% Concentration:

Acute Oral Toxicity: LD50 (Rat) Acute Dermal Toxicity: LD50 (Rabbit)

8910 mg/kg 10,000 mg/kg

Primary Skin Irritation: Severely Irritating Primary Eye Irritation: Severely Imitating

III IMPORTANT COMPONENTS

CAS NUMBER: 1310732

NAME: Sodium hydroxide (Na(OH)) **EXPOSURE LIMITS**

PERCENTAGE

Wt.%

PEL=2 mg/m3. Ceiling

0.2

TLV=2 mg/m3. Ceiling

COMMON NAMES: Caustic Soda

Listed on (see list legend): 13 18 21

NAME: Hypochlorous acid, sodium salt

CAS NUMBER: 7681529 EXPOSURE LIMITS

PERCENTAGE

PEL=Not Established

TLV-Not Established

10.0-16.0 Wt. %

COMMON NAMES: Sodium hypochlorite

Listed on (see list legend): 13 16 18

NAME: Water

EXPOSURE LIMITS

PEL=Not Established

PERCENTAGE

TLV=Not Established

CAS NUMBER: 7732185

Wt. %

81.6-70.0

COMMON NAMES: Water Listed on (see list legend): 19

See Section II

All components of this product that are required to be on the TSCA inventory are listed on the inventory.

Not listed as carcinogen - IARC, NTP, OSHA

LIST LEGEND:

13 PA ENVIRONMENTAL HAZARDOUS SUBSTANCE

16 NJ WORKPLACE HAZ SUBSTANCE LIST

18 NY HAZARDOUS SUBSTANCES

19 PA REQUIREMENT- 3% OR GREATER

21 NJ SPECIAL HEALTH HAZARD SUBSTANCE

IV. FIRE AND EXPLOSION DATA

AUTOIGNITION TEMPERATURE: NA

FLASH POINT: NA FLAMMABLE LIMITS IN AIR, % BY VOLUME- UPPER: NA

LOWER: NA

EXTINGUISHING MEDIA: Use water spray, fog, foam, dry chemical, carbon dioxide or agents suitable for materials in surrounding fire.

SPECIAL FIRE FIGHTING PROCEDURES: Use self-contained breathing apparatus and full protective equipment. Acid contamination will produce very irritating fumes similar to chlorine.

MSDS NUMBER M7745

PRODUCT NAME: SODIUM HYPOCHLORITE

IV. FIRE AND EXPLOSION DATA (CONTINUED)

UNUSUAL FIRE AND EXPLOSION HAZARD: Sodium hypochlorite solutions decompose when heated. Decomposition products may cause containers to rupture or explode. Vigorous reaction possible with organic materials or oxidizing agents and may result in fire.

V. SPECIAL PROTECTION

VENTILATION REQUIREMENTS: Provide good general room ventilation plus local exhaust at points of emission.

SPECIFIC PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY: NIOSH/MSHA approved respirator, following manufacturer's recommendations, should be used as a precautionary measure where airborne contaminants may occur.

EYE: Wear chemical safety goggles plus full face shield to protect against splashing when appropriate.

GLOVES: Wear impervious gloves such as rubber, neoprene or vinyl.

OTHER CLOTHING AND EQUIPMENT: Wear impervious protective clothing including rubber safety shoes. Eye wash and emergency shower should be in close proximity.

VL PHYSICAL DATA

BOILING POINT @ 760 mm Hg: Decomposes above 110 C (230 F)

FREEZING POINT: ND VAPOR PRESSURE: NA VAPOR DENSITY (AIR-1): NA

SPECIFIC GRAVITY (H20-1) 1.15-1.27 depending on concentration.

APPEARANCE AND ODOR: Colorless to light yellow-green liquid with chlorine like odor.

pH: 12 @ 100 GM/L

VI REACTIVITY DATA

CONDITIONS CONTRIBUTING TO INSTABILITY: Strong oxidizer. Stability decreases with concentration, heat light, decrease in pH and contamination by metals.

INCOMPATIBILITY: Avoid contamination with heavy metals, reducing agents, organics, ether, ammonia and acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Acid fumes.

CONDITIONS CONTRIBUTING TO HAZARDOUS POLYMERIZATION: Not known to polymerize.

VIII HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS: Do not store adjacent to chemicals that may react if spillage occurs. Comply with DOT regulations when shipped. If closed containers become heated, vent to release decomposition products (mainly oxygen under normal decomposition). Do not mix or contaminate with ammonia, hydrocarbons, acids, alcohols or ethers.

DO NOT REUSE CONTAINERS: Product residues may remain in containers. All labeled precautions MUST be observed. Dispose of containers in a manner meeting government regulations.

PRODUCT DISPOSAL: Product should be completely removed from containers. Material that cannot be used or chemically reprocessed should be disposed of in a manner meeting government regulations.

IX ENVIRONMENTAL PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Do not allow spilled material to enter sewers or streams. Flush with water to dilute as much as possible and pump into polyethylene containers for disposal. Avoid heat and contamination with acid materials. Do not use combustible materials such as sawdust to absorb hypochlorite. Aquatic toxicity not established, but bleach, if not diluted, may seriously affect aquatic life.

WASTE DISPOSAL METHOD: Reduce with agents such as bisulfates or Ferris salt solutions. Some heat will be produced. Keep on alkaline side and dilute with coplous amounts of water. Main end- product is salt water. Comply with all governmental regulations.

X ADDITIONAL INFORMATION

Sec 311 of the Clean Water Act lists product as a hazardous substance which, if discharged to water, may require Immediate response to mitigate danger to public health and welfare. Spills of 100 lbs. or more must be reported to the National Response Center 1-800-424-8802.

Shipment regulated by U.S. DOT. Material assaying 14.7% (more than 7% available chlorine) is classified corrosive and requires a corrosive label and is assigned UN #1791 as an international identification number (49CFR Sec 172.101). Material assaying less than 14.7% is classified ORM-B with the identifying number NA 1791.

Material is contained on a composite list as required under 101(14) of CERCLA.

Sodium Hypochlorite Is regulated by the EPA under the Federal Insecticide, Fungicide and Rodenticide ACT (FIFRA), if used as a pesticide.

MSDS NUMBER M7745

PRODUCT NAME: SODIUM HYPOCHLORITE

X ADDITIONAL INFORMATION (CONTINUED)

OSHA Standard 29CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty, to make all information in this Material Safety Data Sheet available to your employees.

To aid our customers in complying with regulatory requirements, SARA Title III hazard categories for this product are indicated in section I. If the word "YES" appears next to any category this product may be reportable by you under the requirements of 40CFR Part 370. Please consult those regulations for details.

IMPORTANTI All information presented herein, while not guarantied, was prepared by technical personal and is true and accurate to the best of our knowledge. No warranty or guaranty, express or implied, is made regarding performance, stability or otherwise, the best of our knowledge. No warranty or guaranty, express or implied, is made regarding, storage and other factors may knowledge in the continuous conditions of use, handling, storage and other factors may knowledge of additional safety or performance considerations. While our technical the responsibility of the customer. He suggestions for regarding sets, handling yand one procedures, safe handling and use translated the responsibility of the customer. He suggestions for use thandling yand may be construed as, a recommendation to latings any existing petents or to violate any uses for thandling and residual persons the safe of the customer.

REMEDIAL ACTION



MATERIAL SAFETY DATA SHEET

AC-645

SECTION I: GENERAL INFORMATION

Manufacturer's Name:

Manufacturer's Address:

Manufacturer's Phone No.:

Chemical Family:

Trade Name:

RUSMAR INCORPORATED

216 Garfield Avenue

West Chester, PA 19380

610-436-4314 or 800-733-3626 Aqueous anionic surfactant mixture

RUSMAR AC-645

SECTION II: HAZARDOUS INGREDIENTS

Paints, Preservatives, and Solvents -- None

Alloys and Metallic Coatings -- None

Hazardous Mixtures and Other Materials - None

SECTION III: PHYSICAL DATA

Boiling Point: 100°C

Vapor Pressure: 25mm Hg at 25°C

Vapor Density (Air = 1): N/A

Water Solubility: Complete

Specific Gravity: 1.01 - 1.06 % Volatile, By Volume: None

Evaporation Rate: N/A

Appearance/Odor: Translucent, white, milk-like, odorless, viscous liquid

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method): Nonflammable

Flammable Limits: N/A Extinguishing Media: N/A

Special Fire Fighting Procedures: None

Unusual Fire and/or Explosion Hazards: None

MATERIAL SAFETY DATA SHEET, continued AC-645

SECTION V: HEALTH HAZARD DATA

Threshold Limit Value: Not Determined

Effects of Overexposure:

This material is not expected to present

an inhalation or ingestion hazard. It may cause an eye or skin irritation

upon direct contact.

Emergency and First Aid Procedures: Wash thoroughly with clean water.

SECTION VI: REACTIVITY DATA

Material is stable

No material incompatibility

Hazardous Decomposition Products: Low levels of sulfur oxides on exposure to high temperatures (concentrate). Foam is noncombustible.

Polymerization will not occur

SECTION VII: SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled: If spilled indoors on a hard surface, the spill area may be slippery and should be thoroughly washed with water. Contain spill and absorb material with dirt or other appropriate absorbent.

Waste Disposal Method: This material is completely biodegradable and can be disposed of in a sanitary landfill according to local regulations.

SECTION VIII: SPECIAL PROTECTION INFORMATION

Respiratory Protection: None required for normal operations

Ventilation: No Special requirements

Protective Gloves: Not required, but recommended. Eye Protection: Not required, but recommended.

Other Protective Equipment: None

SECTION IX: SPECIAL PRECAUTIONS

Storing/Handling Precautions: Avoid excessive heat. Material will freeze,

but thawing will not cause changes in the product.

Other Precautions: None



Genium Publishing Corporation

1145 Catalyn Street Schenectady, NY 12303-1836 USA (518) 377-8854

Material Safety Data Sheets Collection:

Sheet No. 467 Automotive Gasoline, Lead-free

Issued: 10/81

Revision: A. 9/91

• Skin

absorption

PPG†

† Sec. 8

Section L. Material Identification:

Automotive Gasoline, Lead-free, Description: A mixture of volatile hydrocarbons composed mainly of branched-chain paraffins, cycloparaffins, olefins, naphthenes, and aromatics. In general, gasoline is produced from petroleum, shale oil, Athabasca tax sands, and coal. Motor gasolines are made chiefly by cracking processes, which convert heavier petroleum fractions into more volatile fractions by thermal or catalytic decomposition. Widely used as fuel in internal combustion engines of the spark-ignited, reciprocating type. Automotive gasoline has an octane number of approximately 90. A high content of aromatic hydrocarbons and a consequent high toxicity are also associated with a high octane rating. Some gasolines sold in the US contain a minor proportion of tetraethyllead, which is added in concentrations not exceeding 3 ml per gallon to prevent engine "knock." However, methyl-tert-butyl ether (MTBE) has almost completely replaced tetraethyllead.

Other Designations: CAS No. 8006-61-9, benzin, gasoline, gasolene, motor spirits, natural gasoline, petrol.

Manufacturer: Contact your supplier or distributor. Consult latest Chemical Week Buyers' Guide^{rts} for a suppliers list.

Captions: Inhalation of automotive gasoline vapors can cause intense burning in throat and lungs, central nervous system (CNS) depression, and possible fatal pulmonary edema. Gasoline is a dangerous fire and explosion hazard when exposed to heat and flames.

Seguon 2 Angredients and Occupational Exposure Lamils

Automotive gasoline, lead-free*

1990 OSHA PELS

8-hr TWA: 300 ppm, 900 mg/m³ 15-min STEL: 500 ppm, 1500 mg/m³ 1990-91 ACGIH TLVs

TWA: 300 ppm, 890 mg/m³ STEL: 500 ppm, 1480 mg/m³

1990 NIOSH REL

None established

1985-86 Toxicity Data*

Man, inhalation, TC_L: 900 ppm/1 hr, toxic effects include sense organs and special senses (conjunctiva initation), behavioral (hallucinations, distorted perceptions), lungs, thorax, or respiration (cough)

Human, eye: 140 ppm/8 hr, toxic effects include mild irritation Rat, inhalation, LC₅₀: 300 g/m³/5 min

* A typical modern gasoline composition is 80% paratifins, 14% aromatics, and 6% olefins. The mean benzene content is approximately 1%. Other additives include sulfur, phosphorus, and MTBE.

† See NIOSH, RTECS (LX3300000), for additional toxicity data.

Section 3. Physical Data

Bolling Point: Initially, 102 'F (39 °C); after 10% distilled, 140 "F (60 °C); after 50% distilled, 230 "F (110 °C); after 90% distilled,

338 °F (170 °C); final boiling point, 399 °F (204 °C)

Vapor Density (air = 1): 3.0 to 4.0

Density/Specific Gravity: 0.72 to 0.76 at 60 °F (15.6 °C)

Water Solubility: Insoluble

Appearance and Odor: A clear (gasoline may be colored with dye), mobile liquid with a characteristic odor recognizable at about 10 ppm in air.

Section 4. Fire and Explosion Data

Flash Point: -45 °F (-43 °C)

Autoignition Temperature: 536 to 853 'F (280 to 456 'C) LEL: 1.3% v/v

UEL: 6.0% v/v

Extinguishing Media: Use dry chemical, carbon dioxide, or alcohol foam as extinguishing media. Use of water may be ineffective to extinguish fire, but use water spray to knock down vapors and to cool fire-exposed drums and tanks to prevent pressure rupture. Do not use a solid stream of water since it may spread the fuel.

Unusual Fire or Explosion Hazards: Automobile gasoline is an OSHA Class IB flammable liquid and a dangerous fire and explosion hazard when exposed to heat and flames. Vapors can flow to an ignition source and flash back. Automobile gasoline can also react violently with oxidizing agents.

Special Fire-fighting Procedures: Isolate hazard area and deny entry. Since fire may produce toxic furnes, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode, and full protective clothing. When the fire is extinguished, use nonsparking tools for cleanup. Be aware of runoff from fire control methods. Do not release to sewers or waterways.

Section 5. Reactivity Data

Stability/Polymerization: Automotive gasoline is stable at room temperature in closed containers under normal storage and handling conditions. Hazardous polymerization cannot occur.

Chemical Incompatibilities: Automotive gasoline can react with oxidizing materials such as peroxides, nitric acid, and perchlorates. Conditions to Avoid: Avoid heat and ignition sources.

Hazardous Products of Decomposition: Thermal oxidative decomposition of automotive gasoline can produce oxides of carbon and partially oxidized hydrocarbons.

No. 467 Automotive Gasoline, Lead-free 9/91

Section 6: Health Hazard-Data

Carcinogenicity: In 1990 reports, the IARC list gasoline as a possible human carcinogen (Group 2B). Although the IARC has assigned an overall Carcinogenicity: In 1990 reports, the IARC list gasoline as a possible human carcinogen (Group 2B). Although the IARC has assigned an overall evaluation to gasoline, it has not assigned an overall evaluation to specific substances within this group (inadequate human evidence). Summary of Risks: Gasoline vapors are considered moderately poisonous. Vapor inhalation can cause central nervous system (CNS) depression and mucous membrane and respiratory tract irritation. Brief inhalations of high concentrations can cause a fatal pulmonary edema. Reported responses to gasoline vapor concentrations are: 160 to 270 ppm causes eye and throat irritation in several hours; 500 to 900 ppm causes eye, nose, and throat irritation, and dizziness in 1 hr; and 2000 ppm produces mild anesthesia in 30 min. Higher concentrations are intoxicating in 4 to 10 minutes. If large areas of skin are exposed to gasoline, toxic amounts may be absorbed. Repeated or prolonged skin exposure causes dermatitis, Certain individuals may develop hypersensitivity. Ingestion can cause CNS depression. Pulmonary aspiration after ingestion can cause severe pneumonitis. In adults, ingestion of 20 to 50 g gasoline may produce severe symptoms of poisoning.

Medical Conditions Aggravated by Long-Term Exposure: None reported.

Target Organs: Skin, eye, respiratory and central nervous systems.

Primary Entry Routes: Inhalation, ingestion, skin contact.

Acute Effects: Acute inhalation produces intense nose, throat, and lung irritation; headaches; blurred vision; conjunctivitis; flushing of the face:

Acute Effects: Acute inhalstion produces intense nose, throat, and lung irritation; headaches; blurred vision; conjunctivitis; flushing of the face; mental confusion; staggering gait; slurred speech; and unconsciousness, sometimes with convulsions. Ingestion causes inebriation (drunkenness), vomiting, dizziness, fever, drowsiness, confusion, and cyanosis (a blue to dark purplish coloration of skin and mucous membrane caused by lack of oxygen). Aspiration causes choking, cough, shormess of breath, increased rate of respiration, excessively rapid heartbeat, fever, brunchitis, and pneumonitis. Other symptoms following acute exposure include acute hemorrhage of the pancreas, fatty degeneration of the liver and kidneys, and passive congestion of spleen.

Chronic Effects: Chronic inhalation results in appetite loss, nausea, weight loss, insomnia, and unusual sensitivity (hyperesthesia) of the distal extremities followed by motor weakness, muscular degeneration, and diminished tendon reflexes and coordination. Repeated skirn exposure can

cause blistering, drying, and lesions.

FIRST AID

Eyes: Gently lift the cyclids and flush immediately and continuously with flooding amounts of water until transported to an emergency medical

Skin: Quickly remove conteminated clothing. Rinse with flooding amounts of water for at least 15 min. For reddened or blistered skin, consult a

physician. Wash affected area with soap and water.

Inhalation: Remove exposed person to fresh air and support breathing as needed.

Ingestion: Never give anything by mouth to an unconscious or convulsing person. If ingested, do not induce vomiting due to aspiration hazard. Give conscious victim a mixture of 2 tablespoons of activated charcoal mixed in 8 oz of water to drink. Consult a physician immediately. After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 7: Spill, Leak, and Disposal Procedures

Spill/Leak: Notify safety personnel, evacuate all unnecessary personnel, remove heat and ignition sources, and provide maximum explosion-proof ventilation. Cleanup personnel should protect against vapor inhalation and liquid contact. Use nonsparking tools. Take up small spills with sand or other noncombustible adsorbent. Dike storage areas to control leaks and spills. Follow applicable OSHA regulations (29 CFR 1910.120). Aquatic Toxicity: Bluegill, freshwater, LC₅₀, 8 ppm/96 hr.
Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

EPA Designations

RCRA Hazardous Waste (40 CFR 261.21): Characteristic of ignitability CERCLA Hazardous Substance (40 CFR 302.4): Not listed SARA Extremely Hazardous Substance (40 CFR 355): Not listed

SARA Toxic Chemical (40 CFR 372.65): Not listed

OSHA Designations

Listed as an Air Contaminant (29 CFR 1910-1000, Table Z-1-A)

Section 8. Special Protection Data

Goggles: Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Since contact lens use in industry is controversial, establish your own policy.

Respirator: Seek professional advice prior to respirator selection and use, Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. There are no specific NIOSH recommendations, However, for vapor concentrations not immediately approved respirator. ately dangerous to life or health, use chemical cartridge respirator equipped with organic vapor cartridge(s), or a supplied air respirator. For amergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Other: Wear impervious gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Materials such as neoprene or polyvinyl alcohol provide excellent/good resistance for protective clothing. Note: Resistance of specific materials can vary from product to

product.
Ventilation: Provide general and local explosion-proof exhaust ventilation systems to maintain airborne concentrations below the OSHA PELs.

Ventilation: Provide general and local explosion-proof exhaust ventilation systems to maintain airborne concentrations below the OSHA PELs. (Sec. 2). Local exhaust ventilation is preferred since it prevents contaminant dispersion into the work area by controlling it at its source. (In Safety Stations: Make available in the work area unergency eyewash stations, safety/quick-drench showers, and washing facilities. Continuinated Equipment: Remove this material from your shoes and equipment. Launder contaminated clothing before wearing. Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9. Special Precautions and Comments

Storage Requirements: Store in closed containers in a cool, dry, well-ventilated area away from heat and ignifion sources and strong oxidizing agents. Protect containers from physical damage, Avoid direct sunlight. Storage must meet requirements of OSHA Class IB liquid. Outside or detached storage preferred.

Engineering Controls: Avoid vapor inhalation and skin or eye contact. Consider a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Indoor use of this material requires explosion-proof exhaust ventilation to remove vapors. Only use gasoline as a fuel source due to its volatility and flammable/explosive nature. Practice good personal hygiene and housekeeping procedures. Wear clean work clothing daily.

Transportation Data (49 CFR 172,101, .102)

DOT Shipping Name: Gasoline (including casing-head and natural)
DOT Hazard Class: Flammable liquid

ID No.: UN1203

DOT Label: Flammable liquid DOT Packaging Exceptions: 173.118 DOT Packaging Requirements: 173.119

IMO Shipping Name: Gasoline IMO Hazard Class: 3.1 ID No.: UN1203 IMO Label: Flammable liquid IMDG Packaging Group: II

MSDS Collection References: 26, 73, 89, 100, 101, 103, 124, 126, 127, 132, 133, 136, 138, 140, 143, 146, 153, 159 Prepared by: M Allison, BS; Industrial Hygiene Review: DJ Wilson, CIH: Medical Review: W Silverman, MD; Edited by: JR Stuart, MS



Genium Publishing Corporation

1145 Catalyn Street Schenectady, NY 12303-1836 USA (518) 377-8854 Material Safety Data Sheets Collection:

Sheet No. 470 Diesel Fuel Oil No. 2-D

Issued: 10/81

Revision: A. 11/90

Section 1: Material Identification

Diesel Fuel Oil No. 2-D Description: Diesel fuel is obtained from the middle distillate in petroleum separation; a distillate R oil of low sulfur content. It is composed chiefly of unbranched paraffins. Diesel fuel is available in various grades, one of which is synonymous with fuel oil No. 2-D. This diesel fuel oil requires a minimum Cetane No. (efficiency rating for diesel fuel comparable to octane number ratings for gasoline) of 40 (ASTM D613). Used as a fuel for trucks, ships, and other automotive engines; as mosquito control (coating on breeding waters); and for drilling muds.

Other Designations: CAS No. 68334-30-5, diesel fuel.

Manufacturer: Contact your supplier or distributor. Consult the latest Chemicalweek Buyers' Guide for a suppliers list.

Cautions: Diesel fuel oil No. 2-D is a skin irritant and central nervous depressant with high mist concentrations. It is an environmental hazard and moderate fire risk.

H 0 F 2 R 0 I PPG*

NFPA

Section 2. Ingredients and Occupational Exposure Limits

Diesel fuel oil No. 2-D*

1989 OSHA PEL

1990-91 ACGIH TLV

1988 NIOSH REL

1985-86 Toxicity Datat

None established

Mineral Oil Mist

None established

Rat, oral, LD₅₀: 9 g/kg produces gastrointestinal (hypermotility, dianhea)

effects

TWA: 5 mg/m³† STEL: 10 mg/m³

Diesel fuel No. 2-D tends to be low in aromatics and high in paraffinics. This fuel oil is complex mixture of: 1) >95% paraffinic, olefinic, naphthenic, and aromatic hydrocarbons, 2) sulfur (<0.5%), and 3) benzens (<100 ppm). [A low benzens level reduces carcinogenic risk. Fuel oils can be exempted under the benzens annound (29 CFR 1910.1028)]. Although low in the fuel itself, benzens concentrations are likely to be much higher in processing areas.

† As sampled by nonvapor-collecting method.

* Monitor NIOSH, RTECS (HZ1800000), for future toxicity data.

Section 3. Physical Data

Boiling Point Range: 340 to 675 °F (171 to 358 °C) Viscosity: 1.9 to 4.1 centistoke at 104 °F (40 °C)

Specific Gravity: <0.86
Water Solubility: Insoluble

Appearance and Odor: Brown, slightly viscous liquid.

Section 4. Fire and Explosion Data

Flash Point: 125 °F (52 °C) min. Autoignition Temperature: >500 °F (932 °C) LEL: 0.6% v/v UEL: 7.5% v/v

Extinguishing Media: Use dry chemical, carbon dioxide, or foam to fight fire. Use a water spray to cool fire exposed containers. Do not use a forced water spray directly on burning oil since this will scatter the fire. Use a smothering technique for extinguishing fire.

Unusual Fire or Explosion Hazards: Diesel fuel oil No. 2-D is a OSHA Class II combustible liquid. Its volatility is similar to that of gas oil. Vapors may travel to a source of ignition and flash back.

Special Fire-fighting Procedures: Isolate hazard area and deny entry. Since fire may produce toxic fumes, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in the pressure-demand or positive-pressure mode and full protective clothing. If feasible, remove containers from fire. Be aware of runoff from fire control methods. Do not release to sewers or waterways due to pollution and fire or explosion hazard.

Section 5. Reactivity Data

Stability/Polymerization: Diesel fuel oil No. 2-D is stable at room temperature in closed containers under normal storage and handling conditions. Hazardous polymerization cannot occur.

Chemical Incompatibilities: It is incompatible with strong oxidizing agents; heating greatly increases the fire hazard.

Conditions to Avoid: Avoid heat and ignition sources.

Hazardous Products of Decomposition: Thermal oxidative decomposition of diesel fuel oil No. 2-D can produce various hydrocarbons and hydrocarbon derivatives, and other partial oxidation products such as carbon dioxide, carbon monoxide, and sulfur dioxide.

Section 6. Health Hazard Data

Carcinogenicity: Although the IARC has not assigned an overall evaluation to diesel fuels as a group, it has evaluated occupational exposures in petroleum refining as an IARC probable human carcinogen (Group 2A). It has evaluated distillate (light) diesel oils as not classifiable as human carcinogens (Group 3).

Summary of Risks: Although diesel fuel's toxicologic effects should resemble kerosine's, they are somewhat more pronounced due to additives such as sulfurized esters. Excessive inhalation of acrosol or mist can cause respiratory tract irritation, headache, dizziness, nausea, vomiting, and loss of coordination, depending on concentration and exposure time. When removed from exposure area, affected persons usually recover completely. If vomiting occurs after ingestion and if oil is aspirated into the lungs, hemorrhaging and pulmonary edems, progressing to renal involvement and chemical pneumonitis, may result. A comparative ratio of oral to aspirated lethal doses may be 1 pt vs. 5 ml. Aspiration may also result in transient CNS depression or excitement. Secondary effects may include hypoxia (insufficient oxygen in body cells), infection, pneumatocele formation, and chronic lung dysfunction. Inhalation may result in euphoria, cardiac dysrhythmias, respiratory artest, and CNS toxicity. Prolonged or repeated skin contact may irritate hair follicles and block sebaceous glands, producing a rash of acue pumples and spots, usually on Prolonged or repeated skin contact may irritate hair follicles and block sebaceous glands, producing a rash of acue pimples and spots, usually on arms and legs.

Medical Conditions Aggravated by Long-Term Exposure: None reported. Target Organs; Central nervous system, skin, and mucous membranes.

Primary Entry Routes: Inhalation, ingestion. Acute Effects: Systemic effects from ingestion include gastrointestinal irritation, vomiting, diarrhea, and in severe cases central nervous system depression, progressing to come or death. Inhalation of aerosols or mists may result in increased rate of respiration, tachycardia (excessively rapid heart beat), and cyanosis (dark purplish discoloration of the skin and mucous membranes caused by deficient blood oxygenation). Chronic Effects: Repeated contact with the skin causes dermatitis.

FIRST AID

Eyes: Gently lift the eyelids and flush immediately and continuously with flooding amounts of water until transported to an emergency medical

facility. Consult a physician immediately.

Skin: Quickly remove contaminated clothing, Rinse with flooding amounts of water for at least 15 min. If large areas of the body have been exposed or if initiation persists, get medical help immediately. Wash affected area with soap and water.

Inhalation: Remove exposed person to fresh air and support breathing as needed.

Ingestion: Never give anything by mouth to an unconscious or convulsing person. If ingested, do not induce vomiting due to aspiration hazard. Contact a physician immediately. Position to avoid aspiration.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: Gastric lavage is contraindicated due to aspiration hazard. Preferred antidotes are charcoal and milk. In cases of severe aspiration pneumonitis, consider monitoring arterial blood gases to ensure adequate ventilation. Observe the patient for 6 hr. If vital signs become abnormal or symptoms develop, obtain a chest x-ray.

Section 7. Spill, Leak, and Disposal Procedures

Spill/Leak: Notify safety personnel, evacuate area for large spills, remove all heat and ignition sources, and provide maximum explosion-proof ventilation. Cleanup personnel should protect against vapor inhalation and liquid contact. Clean up spills promptly to reduce fire or vapor hazards. Use a noncombustible absorbent material to pick up small spills or residues. For large spills, dike far ahead to contain. Pick up liquid for reclamation or disposal. Do not release to sewers or waterways due to health and fire and/or explosion hazard. Follow applicable OSHA regulations (29 CFR 1910.120). Diesel fuel oil No. 2-D spills may be environmental hazards. Report large spills.

Disposal: Connet your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

EPA Designations
RCRA Hazardous Waste (40 CFR 261.21): Ignitable waste
CERCLA Hazardous Substance (40 CFR 302.4): Not listed
SARA Extremely Hazardous Substance (40 CFR 355): Not listed SARA Toxic Chemical (40 CFR 372,65): Not listed

OSHA Designations Air Confaminant (29 CFR 1910.1000, Subpart Z): Not listed

Section 8. Special Protection Data

Goggles: Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133) Respirator: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, use a NIOSH-approved respirator with a mist filter and organic vapor cartridge. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Other: Wear impervious gloves, boots, aprons, and gauntlets to prevent skin contact.

Ventilation: Provide general and local explosion-proof ventilation systems to maintain airborne concentrations that promote worker safety and productivity. Local exhaust ventilation is preferred since it prevents contaminant dispersion into the work area by controlling it at its source. (103) Safety Stations: Make available in the work area emergency eyewash stations, safety/quick-drench showers, and washing facilities.

Contaminated Equipment: Never wear contact lenses in the work area: soft lenses may absorb, and all lenses concentrate, irritants. Remove this

material from your shoes and equipment. Launder contaminated clothing before wearing. Comments: Never cat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9: Special Precautions and Comments

Storage Requirements: Use and storage conditions should be suitable for a OSHA Class II combustible liquid. Store in closed containers in a well-ventilated area away from heat and ignition sources and strong oxidizing agents. Protect containers from physical damage. To prevent static spatchs, electrically ground and bond all containers and equipment used in shipping, receiving, or transferring operations. Use nonsparking mols and explosion-proof electrical equipment. No smoking in storage or use areas.

Engineering Controls: Avoid vapor or mist inhalation and prolonged skin contact. Wear protective rubber gloves and chemical safety glasses where contact with liquid or high mist concentration may occur. Additional suitable protective clothing may be required depending on working conditions. Institute a respiratory protection program that includes regular training, maintenance, inspection, and evaluation. Practice good personal hygiene and housekeeping procedures. Do not wear oil contaminated clothing. At least weekly laundering of work clothes is recommended. Do not put oily rags in pockets. When working with this material, wear gloves or use barrier cream.

Transportation Data (49 CFR 172,101)

DOT Shipping Name: Fucl oil

DOT Hazard Class: Combustible liquid

ID No.: NA1993 DOT Label: Nons

DOT Packaging Exceptions: 173.116a DOT Packaging Requirements: None

MSDS Collection References: 1, 6, 7, 12, 73, 84, 101, 103, 126, 127, 132, 133, 136, 143, 146 Prepared by: MI Allison, BS; Industrial Hygiene Raviow: DI Wilson, CIH; Madical Review: AC Darlington, MD; Edited by: JR Stuart, MS

APPENDIX H

PERMIT AND APPROVALS

FRESHWATER WETLANDS STATEWIDE GENERAL PERMIT EQUIVALENTS [AWAITING APPROVAL]

STREAM ENCROACHMENT PERMIT EQUIVALENT [AWAITING APPROVAL]

SOIL EROSION AND SEDIMENT CONTROL PLAN CERTIFICATE

Permit Application SOIL EROSION & SEDIMENT CONTROL

1267

Township of Piscataway
Department of Community Development

Chemsol Inc. Superfund Site Environme Remediation Trust Applicant William J. Lee, de maximis, inc., 186 Cent	2. (908) 735–9315
Applicant	
William J. Lee, de maximis, inc., 186 Cent	Telephone
	ter St., Suite 290, Clinton, NJ 08809
Mailing Address	
Tang Realty, Inc.	5.
Owner of Property	Telephone
1703 East Second St., Scotch Plains, NJ 08	8854
Mailing Address	
100 Fleming Street	8. Block 229.1, Lots 1.01 and 1.02
Site Location (address or street names)	Primary Block & Lot
Lot 1.01 is wooded; Lot 1.02 is primarily	vacant and contains a groundwater
treatment plant and two concrete pads.	
treatment plant and two concrete pads. Current Description of Site (eg. vacant, wooded, existing hom Construction activities will include exca- and construction of an access road and Brief Description of Proposed Project (eg. build new homes,	vation of existing soils and site restoration stream crossing.
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2) 20. existing natural and man-made features; (X) 21. existing and proposed grades;

29 22. location of all proposed construction;

) 23. existing and proposed storm drainage facilities;

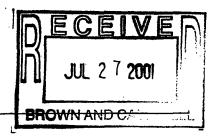
_	• •					
x) 24.	location and details of propose	ed erosion and sediment control devices which must meet or exceed Standards				
		nt Control adopted by the State Soil Conservation Committee;				
K) 25.		nd permanent stabilization that meet or exceed the above Standards;				
¢) 26.	a relative construction schedul control measures;	e showing the sequence of work, especially as may relate to the installation of				
K) 27.		(borings, test pits, etc.), or copies of site specific data obtained from the Soil				
K) 28.						
() 29.	If the project required previou that all conditions of the app	s approval by the Planning or Zoning Boards, you must submit a letter statir roval have been met. Those conditions are listed in the Board's "Resolution" ication will be considered premature.				
ATTE	STATION: This application an	d the enclosed supporting information and plans are submitted for approval				
pursua	nt to the Soil Erosion and Sedir	nent Control Ordinance, Chapter 18A of the Revised Codification of General				
	· · · · · · · · · · · · · · · · · · ·	and the New Jersey Soil Erosion and Sediment Control Act, Chapter 251 of the				
Public	Laws of 1975.					
r kanal	har musaa u that T wadaaad tha r	provisions, and will adhere to the principles and requirements of the above cod				
		ein is true and accurate to the best of my knowledge.				
ann m	at the thiosphation submitted her	en is the and accurate to the best of my knowledge.				
30.	Land Sypo	31. Gary J. DiPippo, P.E.				
	nur Signature	Print Your Name				
2.2	7-19-2001	33. Engineer				
32 Dī		Your Relation To Applicant (Engineer, Super, etc.)				
If the	e are any questions regarding	this permit application, you may contact, Henry Hinterstein, Township				
Lands	cape Architet, at (732) 562-65	567.				
*****	27	PACE BELOW FOR TOWNSHIP USE ONLY				
		ACE BEEG WIGHT ON TOWNSHIP OBE ONE!				
•	•					
Date R	ovd 9.20.01	By Hever A. Date Incomplete				
R⇔son	s Incomplete					
		- 1 Just 13058				
Fee Ca	culation 200 + (12 × 25)					
1		Reviewed by				
	mendation APPROVE					
1000111	mondation Pit 1 Pools					
 						
ACT	ON: ()APPROVED	Date				
	()DENIED	Supervisor of Engineering				

[SE06239"

BUCKEYE PIPELINE EASEMENT ACCESS APPROVAL



BUCKEYE PIPE LINE COMPANY



5002 Buckeye Road Emmaus, Pennsylvania 18049 Tel (484) 232-4000 Fax (484) 232-4541

July 24, 2001

Ms. Carla Oliveira Brown and Caldwell 440 Franklin Turnpike Mahwah, NJ 07430

RE: Chemsol Superfund Site

Piscataway, NJ

BPL LN603/620FZ; 16" & 20"; R/W M-170

Dear Ms. Oliveira:

Buckeye Pipe Line Company has no objections to the temporary use of our pipeline easement for an access road to the subject property, provided the access road is not installed longitudinally over our 16" & 20" high-pressure petroleum pipelines. Should the access road need to cross the pipelines, additional fill may be required over our pipelines at the location of the crossing.

Please coordinate this work with our Local Operations Supervisor, Mr. Joseph Farrell. Mr. Farrell may be reached at 908-862-2544, extension 217.

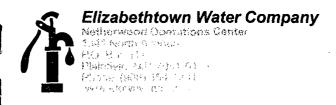
Sincerely,

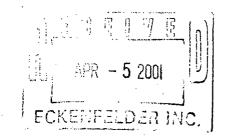
William R. Serra

Relocation Engineer

xc: J. M. Farrell

ELIZABETHTOWN WATER COMPANY EASEMENT ACCESS APPROVAL





VIA FAX

April 4, 2001

Ms. Carla Oliviera Brown & Caldwell 440 Franklin Turnpike Mahwah, New Jersey 07430

RE: Chemsol Superfund Project

Dear Carla:

Please be advised that the protection of our facilities, and our continued access to them, are of paramount concern to Elizabethtown.

Please also be aware that if fill material (permanent or temporary) is going to be placed over or near our main, any existing valve boxes or other at or above grade appurtenances in the affected area must be raised to the prevailing new grade.

With this in mind, please have the appropriate person contact Mr. John Rudko here at Elizabethtown in order to have the site marked out, and have the appropriate materials available on-site. He can be reached at 908.301.3465

This letter confirms Elizabethtown's approval of the proposed improvements around and temporary access to our water main easement on the Chemsol site. Provided that your efforts are coordinated with ours and that the integrity of our pipeline is assured.

Please call me if you have any questions or comments. I can be reached at 908.301.3467.

Sincerely,

Tom Santacroce Property Manager

Elizabethtown Water Company

cc: John Rudko

ARKO PAPER PRODUCTS ACCESS APPROVAL [AWAITING APPROVAL]

Permit Application

TREE REMOVAL

Township of Piscataway
Department of Community Development

F YOU WILL BE REMOVING TREES THAT HAVE A TRUNK DIAMETER GREATER THAN 3 INCHES, THEN THIS PERMIN IS REQUIRED PRIOR TO THE ISSUANCE OF OTHER CONSTRUCTION PERMITS.

PLEASE COMPLETE ALL NUMBERED ITEMS ON BOTH SIDES OF THIS FORM. Please type or print neatly in ink. Do not alborit any fees at this time.

L CODE ENUIPONMENTAL SERVICES INC	2. 732-969-2700
Applicant	Telephone
400 MINDLESEX AVE, CARTERE	ST NJ 07008
Mailing Address	
,	
4. TANG PEALTY CHEMSON SUPERFUND TRU	ST 5: 908-735-9315 BILL LEE
Owner of Property	Telephone
6. <u>IDD FLEMING ST. PISCATAWAY</u>	1, NJ
Mailing Address)
	the second second second
7.100 FLEMING ST., PISCATAWAY NJ	8. BLK # 229.1 LT 1.02
Site Location (address or street names)	Primary Block & Lot
9. WOODED WITH GRASS FIELDS.	GROUDDWATER TREATMENT PLANT
Current Description of Site (eg. vacant, wooded, existing home	e, etc.)
Comment Comments	TOUR DECEMBER OF ALL & DECOME THAT
Description of Proposed Project (eg. build new homes, office,	CON OFFSITE DESPISAL & RESTORATION
Description of Proposed Project (eg. build new homes, outce,	· (7)
TO FACTLETATE SOIL EXCAVAT	FON SE RE.
Reasons for Tree Removal (eg. in way of house, to construct r	
The second for the se	7 7
. NIA	13. 7 TO ACRES OF THE
Number of Trees To Be Removed	T-D-D
Transport of front to be from the	Acreage of Area To Be Removed
NIA	15. Aug. 23. 2001 = 5
Number of Trees Previously Removed	Anticipated Starting Date
THOMAS LOMASSETTE	17. <u>908-482-8427</u>
Person To Contact About This Application	Telephone
THOMAS TOMASSETTI	19. <u>908-48</u> 2-8427
THOMAS TOMASSETTI Person To Contact At Project Site	19. <u>908-482-8427</u> Telephone
THOMAS TOMASSETTI Person To Contact At Project Site YOU MUST COMPLETE THE FOLLOWING CHECKLIST	19. <u>908-482-8427</u> Telephone T, and submit 2 copies of all information with the application. All
THOMAS TOMASSETTI Person To Contact At Project Site YOU MUST COMPLETE THE FOLLOWING CHECKLIST	19. <u>908-482-8427</u> Telephone

Plans and reports showing the following on site:

- 20. existing natural and man-made features;
- (721. existing and proposed grades;
- (≥22. location of all proposed construction;

123. location of individual trees, or the outline of the area of trees proposed to be removed (you are not require to get a permit for underbrush nor the removal of trees with trunks that are less than 3 inches in diameter);

Township's soil crosion code. Standard Sediment Control in New Jersey.	ctive fencing, tree well ds for tree protection (s, etc.). This is required in concan be found in Standards for	junction with Soil Erosion and
26. If the project required previous approves stating that all conditions of the app "Resolution" of approval. Otherwise,	roval have been met.	Those conditions are listed in	
u must also provide the following at the site () 27. clearly marked stakes showing building to the removal of trees (eg. centerline of 28. ribbon or paint marks on individual tre above item # 23; 29. the protective devices noted as per abo	g corners and the locat of road, location of dri es, or the outline of th	iveway, utilities, etc.);	
ATTESTATION: This application and the enclosed as Per about Tree Preservation Ordinance, Chapter 5-9 of the	sed supporting informati		
I hereby swear that I understand the provisions, a le information submitted herein is true and accura	and will adhere to the prinate to the best of my kno	nciples and requirements of the ab wledge.	ove codes, and that
Your Signature		NOMAS TOMASSETTE Your Name	<u>-</u>
	ROTECT MANA Relation To Applicant (E ermit application, yo	ingineer, Super, etc.)	stein, Township
andscape Architect, at (732) 562-6567.	BELOW FOR TOWNSHII		
Date Rovd 8.17.2001 By	Fran H	Date Incomplete	
Reasons Incomplete			
1-2 / 3-7 ====			
ee Calculation 200 + 75 + 200	= \$ 4754 S	EUR LINTERTEN	
Recommendation AFFRONE	Reviewed by	ABORD HIN IBESTAN	
ACTION: MAPPROVED	llz	Date	
()DERIED	SUPERVISOR OF ENGINEERING		[Tr06249